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United States Senate

COMMITTEE ON
HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS

WASHINGTON, DC 20510-6250

December 17, 2014

VIA U.S. MAIL & EMAIL (Jennifer.C.Gallagher@frb.gov)

The Honorable Janet Yellen
Chair
Board of Governors of the Federal Reserve System
Twentieth and Constitution Avenue, N.W.
Washington, D.C. 20551

RE: Advanced Notice of Proposed Rulemaking
Related to Physical Commodities
Docket No. 1479 and RIN 7100 AE-10

Dear Madam Chair:

In January 2014, the Board of Governors of the Federal Reserve System ("Federal Reserve") requested public comment on whether it should issue a proposed rule to impose new restrictions on physical commodity activities conducted by financial holding companies to ensure those activities are conducted in a safe and sound manner and in accordance with law.[1] On April 16, 2014, I submitted comments supporting issuance of the proposed rule.

Last month, the Senate's Permanent Subcommittee on Investigations, which I chair, concluded a two-year investigation into bank involvement with physical commodities, after developing case studies for the three financial institutions with the most extensive physical commodity activities: Goldman Sachs, Morgan Stanley, and JPMorgan Chase. On November 20, 2014, we released a 400-page report, *Wall Street Bank Involvement with Physical Commodities*, detailing our investigation, findings, and recommendations. In addition, on November 20 and 21, 2014, the Subcommittee held two days of hearings in which we took testimony from the three institutions, experts, and regulators, including the Federal Reserve.

The Subcommittee's investigation examined multiple aspects of financial holding company involvement with physical commodities, including the nature, extent, and dollar value of those physical commodity activities, where the activities took place within the financial institutions, attendant risks and risk management efforts, existing restrictions, and market and trading impacts. The investigation detailed examples of physical commodity activities undertaken pursuant to the complementary, grandfather, and merchant banking authorities in the Bank Holding Company Act, as modified by the Gramm-Leach-Bliley Act. It also provided indepth information on specific commodity activities, including trading uranium, mining coal, warehousing aluminum, copper and other metals, operating oil and natural gas storage and

[1] See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities," Docket No. R-1479, RIN 7100 AE-10, 79 Fed. Reg.3329 (1/21/2014).

pipeline facilities, constructing a compressed natural gas facility, and managing electrical power plants. It also examined the nature and impact of size limits on physical commodity activities. In addition, it raised concerns about financial holding company involvement with market manipulation and with using non-public information from physical commodity activities to trade in the related commodity financial markets.

Because the Subcommittee's investigation is directly relevant to the Federal Reserve's deliberations on the proposed rule, provides data on issues being considered in connection with the proposed rule, and provides ample support for imposing new restrictions to reduce risks and conflicts of interest and protect the separation of banking and commerce in the context of financial holding company involvement with physical commodities, this letter asks that the enclosed copy of the report be made part of the administrative rulemaking record. In addition, the letter requests that the Subcommittee's full hearing record be made a part of the administrative rulemaking record after a bound copy is produced by the Government Printing Office and supplied by the Subcommittee by the end of the year. These materials will provide the Federal Reserve with a detailed factual foundation as well as bipartisan findings and recommendations related to understanding the physical commodity activities being undertaken by financial holding companies, the related risks, and the scope, impact, and deficiencies of existing restrictions.

Thank you for this opportunity to submit this additional information for the rulemaking record.

Sincerely,

Carl Levin
Chairman
Permanent Subcommittee on Investigations

Enclosure

United States Senate
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS
Committee on Homeland Security and Governmental Affairs

Carl Levin, Chairman
John McCain, Ranking Minority Member

WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

MAJORITY AND MINORITY STAFF REPORT

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS

UNITED STATES SENATE

RELEASED IN CONJUNCTION WITH THE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS NOVEMBER 20 AND 21, 2014 HEARING

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Chairman

SENATOR JOHN McCAIN
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WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

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WALL STREET BANK INVOLVEMENT WITH PHYSICAL COMMODITIES

I. EXECUTIVE SUMMARY

For more than a decade, the U.S. Senate Permanent Subcommittee on Investigations has investigated and presented case histories on the workings of the commodities markets, with the objective of ensuring well-functioning markets with market-based prices, effective hedging tools, and safeguards against market manipulation, conflicts of interest, and excessive speculation. Past investigations have presented case studies on pricing gasoline; exposing a $6 billion manipulation of natural gas prices by a hedge fund called Amaranth; closing the Enron loophole impeding energy market oversight; tracing excessive speculation in the crude oil and wheat markets; exposing the increased role of mutual funds, exchange traded funds, and other financial firms in commodity speculation; and revitalizing position limits as tools to combat market manipulation and excessive speculation.[1]

This investigation focuses on the recent rise of banks and bank holding companies as major players in the physical markets for commodities and related businesses. It presents case studies of three major U.S. bank holding companies, Goldman Sachs,[2] JPMorgan Chase,[3] and Morgan Stanley that over the last ten years were the largest bank holding company participants in physical commodity activities. Those activities included trading uranium, operating coal mines, running warehouses that store metal, stockpiling aluminum and copper, operating oil and gas pipelines, planning to build a compressed natural gas facility, acquiring a natural gas pipeline company, selling jet fuel to airlines, and operating power plants.

The United States has a long tradition of separating banks from commerce. The Subcommittee's case studies show how that tradition is eroding, and along with it, protections from a long list of risks and potentially abusive conduct, including significant financial loss, catastrophic event risks, unfair trading, market manipulation, credit distortions, unfair business competition, and conflicts of interest. The investigation also highlights how the Federal Reserve has identified financial holding company involvement with physical commodities as a significant risk, but has taken insufficient steps to address it. More is needed to safeguard the U.S. financial system and protect U.S. taxpayers from being forced to bailout large financial institutions involved with physical commodities.

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[1] See, e.g., U.S. Senate Permanent Subcommittee on Investigations reports and hearings, "Gas Prices: How Are They Really Set?" S. Hrg. 107-509 (April 30 and May 2, 2002); "U.S. Strategic Petroleum Reserve: Recent Policy has Increased Costs to Consumers But Not Overall U.S. Energy Security," S. Prt. 108-18 (March 5, 2003); "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat." S. Prt. 109-65 (June 27, 2006); "Excessive Speculation in the Natural Gas Market," S. Hrg. 110-235 (June 25 and July 9, 2007); "Excessive Speculation in the Wheat Market," S. Hrg. 110-235 (June 25 and July 9, 2007); "Excessive Speculation and Compliance with the Dodd-Frank Act," S. Hrg. 112-313 (November 3, 2011); and "Compliance with Tax Limits on Mutual Fund Commodity Speculation," S. Hrg. 112-343 (January 26, 2012).

[2] The terms "Goldman Sachs" and "Goldman" are intended to refer to The Goldman Sachs Group, Inc., the financial holding company, unless otherwise indicated.

[3] The terms "JPMorgan Chase" or "JPMorgan" are intended to refer to JPMorgan Chase & Co., the financial holding company, unless otherwise indicated.

A. Subcommittee Investigation

The Subcommittee initiated this investigation in 2012. As part of the investigation, the Subcommittee gathered and reviewed over 90,000 pages of documents from Goldman Sachs, JPMorgan, Morgan Stanley, the Federal Reserve, the Office of the Comptroller of the Currency (OCC), Commodity Futures Trading Commission (CFTC), and Federal Energy Regulatory Commission (FERC), as well as from a number of other financial firms and agencies. The Subcommittee obtained information from them through information requests, briefings, interviews, and reviews of publicly available information. The Subcommittee participated in 78 interviews and briefings involving the financial institutions, regulators, and other businesses and agencies. In addition, the Subcommittee spoke with academic and industry analysts, as well as experts in a variety of fields, including banking law, commodities trading, environmental and catastrophic risk management, and the aluminum, copper, coal, uranium, natural gas, oil, jet fuel, and power markets. Goldman Sachs, Morgan Stanley, and JPMorgan, as well as U.S. federal banking regulators, other U.S. agencies, and the London Metal Exchange (LME) all cooperated with Subcommittee requests for information.

B. Investigation Overview

The Subcommittee investigation developed case studies involving the three U.S. financial holding companies with the largest levels of involvement with physical commodities, Goldman Sachs, JPMorgan, and Morgan Stanley. Within each case study, the Subcommittee looked at three specific commodities issues in detail to illustrate the wide variety of physical commodity activities underway and the particular concerns they raise.

The Goldman case study looks at Goldman's acquisition of a company called Nufcor which bought and sold physical uranium and supplied it to nuclear power plants. The case study also examines Goldman's ownership of two open-pit coal mines in Colombia and its use of Colombian subsidiaries to produce, market, and export that coal. In addition, it scrutinizes Goldman's involvement with aluminum, including its acquisition of Metro International Trade Services LLC, a warehouse company with nearly 30 Detroit warehouses containing the largest LME-certified aluminum stocks in the United States.

The Morgan Stanley case study focuses on Morgan Stanley's involvement with natural gas, in particular its effort to construct a new compressed natural gas facility in Texas and its involvement with a natural gas pipeline company in the Midwest named Southern Star. It also examines Morgan Stanley's involvement with oil storage and transport activities, and its role as a supplier of jet fuel to United Airlines and as a jet fuel hedging counterparty to Emirates airline.

The JPMorgan case study features JPMorgan's acquisition of over 30 power plants across the United States, and subsequent involvement with manipulating electricity payments and blocking plant modifications to improve grid reliability. The case study also examines JPMorgan's involvement with physical copper activities, including massive copper trades, a multi-billion-dollar copper inventory that operates free of regulatory size limits, and a proposal to establish a copper-backed exchange traded fund that some industrial copper users view as potentially creating artificial copper shortages and price increases. In addition, the case study examines how JPMorgan used loopholes, exclusions, and valuation minimization techniques to stay under regulatory limits on the size of its physical commodity holdings.

In addition to analyzing financial company involvement with physical commodity activities, the investigation examined the level of oversight exerted by the Federal Reserve, which has sole authority over bank holding companies in the United States, including bank holding companies that have elected to operate as "financial holding companies" authorized to engage in physical commodity activities. In 2009, as part of its effort to analyze risks in the U.S. financial system after the financial crisis, the Federal Reserve identified bank involvement with physical commodities as an area of concern and initiated a multi-year review of the issue. In an October 2012 report, the Federal Reserve Bank of New York Commodities Team that conducted the special review issued an internal, staff-level report concluding bank involvement with physical commodities raised significant concerns that required action. A year ago, the Federal Reserve signaled that it was considering initiating a rulemaking to reduce the risks associated with physical commodities, but has yet to issue a proposed rule.

Risky Activities. All three of the financial holding companies examined by the Subcommittee were engaged in a wide range of risky physical commodity activities which included, at times, producing, transporting, storing, processing, supplying, or trading energy, industrial metals, or agricultural commodities. Many of the attendant risks were new to the banking industry, and could result in significant financial losses to the financial institutions.

One set of risks arose from the sheer size of each financial institution's physical commodity activities. Until recently, Morgan Stanley controlled over 55 million barrels of oil storage capacity, 100 oil tankers, and 6,000 miles of pipeline. JPMorgan built a copper inventory that peaked at $2.7 billion, and, at one point, included at least 213,000 metric tons of copper, comprising nearly 60% of the available physical copper on the world's premier copper trading exchange, the LME. In 2012, Goldman owned 1.5 million metric tons of aluminum worth $3 billion, about 25% of the entire U.S. annual consumption. Goldman also owned warehouses which, in 2014, controlled 85% of the LME aluminum storage business in the United States. Those large holdings illustrate the significant increase in participation and power of the financial holding companies active in physical commodity markets.

In addition to accumulating large inventories, the three financial holding companies engaged in transactions involving massive amounts of physical commodities. JPMorgan executed a series of copper trades in 2010 involving more than $1.5 billion, and a series of aluminum trades in 2011 involving $1.9 billion. In 2012, Goldman twice made purchases of LME warrants providing title to physical aluminum worth more than $1 billion. In 2012, Morgan Stanley bought 950,000 barrels of heating oil. These transactions represented outsized physical commodity trades within their respective markets. Since most physical commodity transactions are not subject to regulation by the Commodity Futures Trading Commission, Securities Exchange Commission (SEC), or bank regulators, those transactions also represent an area in which risky conduct may escape federal oversight.

In addition to compiling huge commodity inventories and participating in outsized transactions, the three financial holding companies chose to engage in commodity-related businesses that carried potential catastrophic event risks. While the likelihood of an actual catastrophe remained remote, those activities carried risks that banks normally avoided altogether. Goldman, for example, bought a uranium business that carried the risk of a nuclear incident, as well as open pit coal mines that carried potential risks of methane explosions, mining mishaps, and air and water pollution. Its coal mines also experienced extended labor unrest,

which at one point led to requests for police and military assistance to remove a human blockade preventing entry to the mines, risking injuries, an international incident, or worse. Morgan Stanley owned and invested in extensive oil storage and transport facilities and a natural gas pipeline company which, together, carried risks of fire, pipeline ruptures, natural gas explosions, and oil spills. JPMorgan bought dozens of power plants whose risks included fire, explosions, and air and water pollution. Throughout most of their history, U.S. banks have not incurred those types of catastrophic event risks.

In some cases, the financial holding companies intensified their liability risks. Morgan Stanley formed shell companies to launch construction of a compressed natural gas facility, and ran the venture entirely with Morgan Stanley employees and resources, opening up the financial holding company to direct liability if a worst case scenario should occur. Goldman bought two Colombian coal mines, took control of 100% of the coal sales, and provided other essential services to its subsidiaries running the business, putting itself at significant financial risk if potential mining-related accidents were to occur. Goldman also purchased an existing uranium business and, after its employees left, used Goldman personnel to buy and sell uranium and supply it to nuclear power plants. JPMorgan took 100% ownership of several power plants, exposing the financial holding company, as the direct owner, to financial liability should any of those plants experience a catastrophic event.

At the same time, none of the three financial holding companies was adequately prepared for potential losses from a catastrophic event related to its physical commodity activities, having allocated insufficient capital and insurance to cover losses compared to other market participants. In its recent public filing seeking comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities, the Federal Reserve described a litany of past industrial disasters, including massive oil spills, railway crashes, nuclear power plant meltdowns, and natural gas explosions.[4] The Federal Reserve wrote:

> "Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants."[5]

When the Federal Reserve Commodities Team, in 2012, analyzed the extent to which a group of four financial holding companies, including the three examined here, had allocated capital and insurance to cover "extreme loss scenarios," it determined that all four had insufficient coverage, and that each had a shortfall of $1 billion to $15 billion.[6] In other words, if a catastrophic event were to subject a financial holding company to multi-billion-dollar costs

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[4] See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed.Reg. 3329 (daily ed. Jan. 21, 2014)(hereinafter "ANPR"), http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf.

[5] Id. at 3331.

[6] 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team, (hereinafter "2012 Summary Report"), FRB-PSI-200477 - 510, at 498, 509 [sealed exhibit]. See also ANPR, at 3332 - 3333.

to the same extent as, for example, BP Petroleum in the Deep Water Horizon oil spill disaster, the financial holding company would not have the capital and insurance needed to cover its losses which, in turn, might lead to its business partners and creditors reducing their business activities or lending to the financial holding company, exacerbating its financial difficulties. In a worst case scenario, the Federal Reserve and ultimately U.S. taxpayers could be forced to step in with financial support to avoid the financial institution's collapse and consequential damage to the U.S. financial system and economy.

Unfair Trading Advantages. A second set of issues involves unfair trading advantages. When financial holding companies seek permission from the Federal Reserve to engage in physical commodity activities, a common reason given for approving the activities is that exposure to the physical market would improve the company's trading in the corresponding financial market. For example, in its 2005 application to the Federal Reserve for complementary authority to participate in physical commodity activities, JPMorgan explained that engaging in such activities would:

> "position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings." [7]

In the activities reviewed by the Subcommittee, the financial companies often traded in both the physical and financial markets at the same time, with respect to the same commodities, frequently using the same traders on the same trading desk. In some cases, after purchasing a physical commodity business, the financial holding company ramped up its financial trading. For example, after Goldman bought Nufcor, the uranium company, it increased Nufcor's trading activity tenfold, going in four years from an annualized rate of 1.3 million pounds of uranium to trades involving 13 million pounds. In all of the commodities examined by the Subcommittee, however, the trades executed by the financial holding companies in a commodity's physical markets remained a small percentage of the trades they executed in the corresponding financial markets, reflecting the greater focus of the financial holding companies on earning substantial revenues from trading in those financial markets.

In some cases, financial holding companies used their physical commodity activities to influence or even manipulate commodity prices. JPMorgan, for example, paid $410 million to settle charges by the Federal Energy Regulatory Commission that it used manipulative bidding practices to obtain excessive electricity payments in California and the Midwest. Goldman was sued by over a dozen industrial users of aluminum claiming that Goldman's warehouses were artificially delaying the release of aluminum from storage to boost prices and restrict supplies. As discussed below, in connection with its warehouses in Detroit, Goldman approved "merry-go-round" transactions in which warehouse clients were paid cash incentives to load aluminum from

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[7] 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89," PSI-FederalReserve-01-000004 - 028, at 016.

one Metro warehouse into another, essentially blocking the warehouse exits while they moved their metal. Those merry-go-round transactions lengthened the queue for other metal owners seeking to exit the Detroit warehouses, accompanied by increases in the Midwest Premium for aluminum. In another troubling development, JPMorgan proposed an exchange traded fund (ETF) to be backed with physical copper, described below. In filings with the Securities and Exchange Commission, some industrial copper users charged that the proposed ETF would create artificial copper shortages as copper was stockpiled to back the fund, leading to price hikes and, potentially, manipulation of market prices.

In addition, in each of the three case studies, evidence showed that the financial holding companies used their physical commodity activities to gain access to commercially valuable non-public information that could be used to benefit their financial trading activities. For example, Morgan Stanley's oil storage and transport activities gave it access to information about oil shipments, storage fill rates, and pipeline breakdowns. That information was available not only with respect to its own activities, but also for clients using its storage and pipeline facilities. Goldman's warehouse business gave over 50 Goldman employees access to confidential warehouse information about aluminum shipments, storage volumes, and warrant cancellations. Its coal mines in Colombia, the number one exporter of coal to the United States, provided Goldman with non-public information about coal prices, export levels, and environmental regulatory developments that could affect coal exports. JPMorgan's power plants gave it insights into electricity costs, congestion areas, and power plant capabilities and shutdowns, all of which could be used to advantage in trading activities. In each instance, non-public market intelligence about physical commodity activities provided an opportunity for the financial holding company to use the information to benefit its financial trading activities.

U.S. commodities laws traditionally have not barred the use of non-public information by commodity traders in the same way as securities laws have barred its use in securities trades. But when large financial holding companies begin to take control of physical commodity businesses, gain access to large amounts of commercially valuable market intelligence unavailable to most market participants, and use that information to make large profitable trades in financial markets, concerns deepen about unfair trading advantages. Those types of concerns have been magnified by the financial holding companies' increased involvement with physical commodities.

Commodity markets used to be dominated by commodity producers and end-users, like farmers, manufacturers, airlines, and municipalities who relied on the commodity markets to determine fair prices for critical materials, and to hedge their future price risks. They typically held 70% of the open interest in the futures markets, while commodity speculators held about 30%. But by 2011, those percentages were reversed, with commodity speculators dominating U.S. commodity markets, including financial holding companies like the three Wall Street banks examined by the Subcommittee. Under those changed circumstances, if commodity markets are to be fair, it is particularly important that large traders like financial holding companies not gain unfair trading advantages.

Mixing Banking and Commerce. For over 150 years, the United States has generally restricted banks to the business of banking and discouraged the mixing of banking and commerce. Multiple concerns, discussed in more detail below, have been articulated over the

years to support the separation of banking from commerce, but the case studies discussed in this Report show how that principle is being eroded.

The case studies show how financial holding companies have taken control of numerous commercial businesses that have never before been run by a bank or bank holding company. Morgan Stanley's effort to construct a compressed natural gas facility, for example, is unprecedented for a bank or bank holding company, and in direct competition with a similar project by a private company. Morgan Stanley's jet fuel supply services also compete directly with oil and refining companies providing the same services. Goldman's coal operations are in direct competition with those of an American company that is the second largest coal producer in Colombia. In running its power plants, JPMorgan competes with utilities and other energy companies that specialize in that business. Until recently, banks and their holding companies focused on financing private sector businesses, rather than acquiring and using subsidiaries to compete against them.

One key concern when financial holding companies compete against non-bank companies is that their borrowing costs will nearly always undercut those of their non-bank competitors. Another advantage is their relatively low capital requirements. The Federal Reserve Commodities Team determined that, in 2012, corporations engaged in oil and gas businesses typically had a capital ratio of 42% to cover potential losses, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.[8] In addition to those fundamental economic advantages over non-bank companies, a financial holding company could, in theory, help its rise in a particular business simply by not providing financing to its rivals. Some experts have identified less expensive financing, lower capital, and control over credit decisions as key factors that give financial holding companies an unfair advantage over non-bank competitors and represent some of the concerns motivating the traditional U.S. ban on mixing banking with commerce. Avoiding the catastrophic risks described above is another.

Still another set of concerns involves the transitory nature of a financial holding company's involvement in any particular physical commodity operation. In most cases, financial holding companies are looking for short-term financial returns rather than making long-term commitments to run a business like a power plant or natural gas facility. In addition, financial holding companies that make so-called merchant banking investments in a commercial company are constrained by law to sell those investments generally within ten years.

Those relatively short-term investment horizons mean that financial holding companies are not or may not be willing to develop or dedicate the resources, time, and expertise needed to make complex infrastructure investments and meet regulatory requirements. For example, in the case studies, Goldman chose not to upgrade its port in Colombia with new coal loading equipment, while JPMorgan stalled upgrades to two power plants in California to support grid reliability, making decisions contrary to the companies participating in those business sectors for the long haul. Without those investments, however, a financial holding company may place itself at greater risk of violating regulations or experiencing a catastrophic event. A related concern is whether decisions by financial holding companies to delay or avoid infrastructure

[8] 2012 Summary Report, at FRB-PSI-200499.

investments disadvantage competitors who do make those investments and may, in fact, pressure those competitors to delay or skimp on needed infrastructure as well.

Many physical commodity businesses today rely on a small cadre of experienced corporations with long term investment horizons to transport oil and gas, mine coal, process uranium, or generate electricity. Those corporations make expensive infrastructure investments. The prospect of financial holding companies changing those markets by buying particular companies, capturing profits, and then pulling out, is a troubling scenario.

Inadequate Safeguards. A final set of issues involves a current lack of effective regulatory safeguards related to financial holding company involvement with risky physical commodities. As explained in the following chapters, financial holding companies currently conduct physical commodity activities under one of three authorities provided in the Gramm-Leach-Bliley Act of 1999, the so-called complementary, merchant banking, and grandfather authorities. Despite enactment of that law 15 years ago, the Federal Reserve has yet to address a host of pressing questions related to how that law should be implemented.

For example, the Federal Reserve has never issued guidance on the scope of the grandfather authority that allows financial firms that convert to bank holding companies to continue to engage in certain physical commodity activities. That failure has allowed Goldman and Morgan Stanley to use expansive readings of the grandfather authority to justify otherwise impermissible physical commodity activities. The Federal Reserve has also failed to specify capital and insurance minimums to protect against losses related to catastrophic events. Nor has it clarified whether financial holding companies can use shell companies to conduct physical commodity businesses as Morgan Stanley and Goldman have done in their compressed natural gas and uranium trading businesses. Procedures to force divestment of impermissible physical commodity activities are also opaque and slow.

One key problem is that the Federal Reserve currently relies upon an uncoordinated, incoherent patchwork of limits on the size of the physical commodity activities conducted under various legal authorities, permitting major exclusions, gaps, and ambiguities. In September 2012, for example, according to its own records, JPMorgan held physical commodity assets with a combined market value of at least $17.4 billion, which was then equal to nearly 12% of its Tier 1 capital of $148 billion, while at the same time calculating its physical commodity assets for regulatory purposes at $6.6 billion or just 4.5% of its Tier 1 capital. JPMorgan was able to report that lower amount by excluding and minimizing the market value of many of its physical commodity assets, including billions of dollars in industrial metal held by its subsidiary national bank. The Federal Reserve has not, to date, objected to JPMorgan's key exclusions. The Office of the Comptroller of the Currency (OCC) has its own size limit, which applies to its banks, but those are also ineffective in calculating the actual size of a bank's commodity holdings. Size limits subject to massive exclusions provide an illusion of risk management. The existing size limits on physical commodities need to be reworked to ensure they effectively achieve the intended limit on financial holding companies' and banks' commodities holdings.

A final set of problems arise from the lack of essential data. The Federal Reserve only recently began requiring regular reports from financial holding companies tracking their

compliance with size limits, and has yet to clarify how the market value of commodity holdings should be calculated for compliance purposes. Commodity-related merchant banking investments are made by multiple components within a financial holding company – in the commodities division, proprietary investment units, infrastructure funds, and other capital funds – but the Federal Reserve does not require a listing of all of those physical commodity investments on a single report. Instead, the Federal Reserve requires an annual merchant banking report with such high level aggregate data that it cannot be used to analyze the extent to which those investments involve physical commodities or the extent to which the data includes all of the commodity-related investments taking place throughout the financial holding company. The Federal Reserve does even less with respect to grandfathered physical commodity activities, not requiring any regular reports at all. Moreover, the availability of public information on financial holding company involvement with physical commodities is almost non-existent. Ensuring physical commodity activities are conducted in a safe and secure manner will require more comprehensive, regular, and publicly available reports from financial holding companies.

In early 2014, the Federal Reserve indicated that it was considering issuing a new rulemaking to address the risks to the financial system caused by bank involvement with physical commodities. That announcement was based upon several years of work examining the physical commodity activities being conducted by financial holding companies. The Federal Reserve's focus on the issue has also led all three of the financial holding companies examined by the Subcommittee to reduce the level and breadth of their physical commodity activities. However, none of the three has yet exited the area completely, and other financial institutions are considering entering the field or increasing their physical commodity activities. In addition, Goldman has said that it considers physical commodities to be a core business it is not leaving.

C. Findings of Fact and Recommendations

Findings of Fact

(1) **Engaging in Risky Activities.** Since 2008, Goldman Sachs, JPMorgan Chase, and Morgan Stanley have engaged in many billions of dollars of risky physical commodity activities, owning or controlling, not only vast inventories of physical commodities like crude oil, jet fuel, heating oil, natural gas, copper, aluminum, and uranium, but also related businesses, including power plants, coal mines, natural gas facilities, and oil and gas pipelines.

(2) **Mixing Banking and Commerce.** From 2008 to 2014, Goldman, JPMorgan, and Morgan Stanley engaged in physical commodity activities that mixed banking and commerce, benefiting from lower borrowing costs and lower capital to debt ratios compared to nonbank companies.

(3) **Affecting Prices.** At times, some of the financial holding companies used or contemplated using physical commodity activities, such as electricity bidding strategies, merry-go-round trades, or a proposed exchange traded fund backed by physical copper, that had the effect or potential effect of manipulating or influencing commodity prices.

(4) **Gaining Trading Advantages.** Exercising control over vast physical commodity activities gave Goldman, JPMorgan, and Morgan Stanley access to commercially valuable, non-public information that could have provided advantages in their trading activities.

(5) **Incurring New Bank Risks.** Due to their physical commodity activities, Goldman, JPMorgan, and Morgan Stanley incurred multiple risks normally absent from banking, including operational, environmental, and catastrophic event risks, made worse by the transitory nature of their investments.

(6) **Incurring New Systemic Risks.** Due to their physical commodity activities, Goldman, JPMorgan, and Morgan Stanley incurred increased financial, operational, and catastrophic event risks, faced accusations of unfair trading advantages, conflicts of interest, and market manipulation, and intensified problems with being too big to manage or regulate, introducing new systemic risks into the U.S. financial system.

(7) **Using Ineffective Size Limits.** Prudential safeguards limiting the size of physical commodity activities are riddled with exclusions and applied in an uncoordinated, incoherent, and ineffective fashion, allowing JPMorgan, for example, to hold physical commodities with a market value of $17.4 billion – nearly 12% of its Tier 1 capital – while at the same time calculating the market value of its physical commodity holdings for purposes of complying with the Federal Reserve limit at just $6.6 billion.

(8) **Lacking Key Information.** Federal regulators and the public currently lack key information about financial holding companies' physical commodities activities to form an accurate understanding of the nature and extent of those activities and to protect the markets.

Recommendations

(1) **Reaffirm Separation of Banking and Commerce as it Relates to Physical Commodity Activities.** Federal bank regulators should reaffirm the separation of banking from commerce, and reconsider all of the rules and practices related to physical commodity activities in light of that principle.

(2) **Clarify Size Limits.** The Federal Reserve should issue a clear limit on a financial holding company's physical commodity activities; clarify how to calculate the market value of physical commodity holdings; eliminate major exclusions; and limit all physical commodity activities to no more than 5% of the financial holding company's Tier 1 capital. The OCC should revise its 5% limit to protect banks from speculative or other risky positions, including by calculating it based on asset values on a commodity-by-commodity basis.

(3) **Strengthen Disclosures.** The Federal Reserve should strengthen financial holding company disclosure requirements for physical commodities and related businesses in internal and public filings to support effective regulatory oversight, public disclosure, and investor protections, including with respect to commodity-related merchant banking and grandfathered activities.

(4) **Narrow Scope of Complementary Activity.** The Federal Reserve should narrow the scope of "complementary" activities by requiring financial holding companies to demonstrate how a proposed physical commodity activity would be directly linked to and support the settlement of other financial transactions conducted by the company.

(5) **Clarify Scope of Grandfathering Clause.** The Federal Reserve should clarify the scope of the "grandfather" clause as originally intended, which was only to prevent disinvestment of physical commodity activities that were underway in September 1997, and continued to be underway at the time of a company's conversion to a financial holding company.

(6) **Narrow Scope of Merchant Banking Authority.** The Federal Reserve should tighten controls over merchant banking activities involving physical commodities by shortening and equalizing the 10-year and 15-year investment time periods, clarifying the actions that qualify as "routine operation and management" of a business, and including those activities under an overall physical commodities size limit.

(7) **Establish Capital and Insurance Minimums.** The Federal Reserve should establish capital and insurance minimums based on market-prevailing standards to protect against potential losses from catastrophic events in physical commodity activities, and specify the catastrophic event models used by financial holding companies.

(8) **Prevent Unfair Trading.** Financial regulators should ensure that large traders, including financial holding companies, are legally precluded from using material non-public information gained from physical commodities activities to benefit their trading activities in the financial markets.

(9) **Utilize Section 620 Study.** Federal regulators should use the ongoing Section 620 study requiring regulators to identify permissible bank activities to restrict banks and their holding companies from owning or controlling physical commodities in excess of 5% of their Tier 1 capital and consider other appropriate modifications to current practice involving physical commodities.

(10) **Reclassify Commodity-Backed ETFs.** The Commodity Futures Trading Commission (CFTC) and Securities Exchange Commission should treat exchange traded funds (ETFs) backed by physical commodities as hybrid security-commodity instruments subject to regulation by both agencies. The CFTC should apply

position limits to ETF organizers and promoters, and consider banning such instruments due to their potential use in commodity market corners or squeezes.

(11) Study Misuse of Physical Commodities to Manipulate Prices. The Office of Financial Research should study and produce recommendations on the broader issue of how to detect, prevent, and take enforcement action against all entities that use physical commodities or related businesses to manipulate commodity prices in the physical and financial markets.

II. BACKGROUND

This section provides background information on the history of U.S. bank involvement with physical commodities, including how federal statutes governing permissible bank activities have changed over time. It also provides background information on the concerns motivating U.S. efforts to restrict federal banks to the "business of banking" and discourage the mixing of banking with commerce; the roles played by federal regulators charged with overseeing commodity-related activities; and the key physical commodity regulatory issues now facing federal bank regulators.

A. Short History of Bank Involvement in Physical Commodities

For the first 150 years of banks operating in the United States, commodities played a very limited role in bank activities, in part because federal laws discouraged the mixing of banking and commerce. More recently, however, in response to bank pressure, federal regulators began to weaken the separation of banking and commerce. In the 1980s, with the invention of energy-based commodities that could be traded in futures and swaps markets, U.S. banks began to increase their commodities activities. In 1999, Congress enacted the Gramm-Leach-Bliley Act which explicitly allowed banks to engage in commercial activities, including activities involving commodities. Over the next decade, a handful of major U.S. banks not only began to expand their trading in commodity-based financial instruments, but also to take ownership interests in, or exert control over, businesses handling physical commodities. The 2008 financial crisis further boosted bank involvement, when one major bank acquired a securities firm with commodity investments, and two securities firms with extensive commodity holdings converted to bank holding companies. Today, a handful of large U.S. banks and their holding companies are major players in U.S. commodities markets. Those banks not only dominate commodities trading on financial markets, but also own or exercise control over businesses that produce, store, transport, refine, supply, and utilize physical commodities, including oil products, natural gas, coal, metals, and electricity. The current level of bank involvement with critical raw materials, power generation, and the food supply appears to be unprecedented in U.S. history.

(1) Historical Limits on Bank Activities

In the United States, banks have traditionally operated under laws that restrict them to engaging in the "business of banking."[9] The key federal statutory provision authorizes national banks to engage in:

> "all such incidental powers as shall be necessary to carry on the business of banking; by discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; by receiving deposits; by buying and selling exchange, coin, and bullion; by loaning money on personal security; and by obtaining, issuing, and circulating notes ...."[10]

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[9] 12 U.S.C. §24 (Seventh).

[10] Id., originating as the "bank powers clause" of the National Bank Act of 1863, and attaining its current wording in the Glass-Steagall Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §16. See also "Permissible Securities Activities of Commercial Banks Under the Glass-Steagall Act (GSA) and the Gramm-Leach-Bliley Act (GLBA)," Congressional

Since 1956, bank holding companies have operated under a similar set of restrictions.[11] The Bank Holding Company Act generally limits companies that own or control a bank to engaging in banking activities or activities determined by the Federal Reserve "to be so closely related to banking as to be a proper incident thereto."[12] According to one expert, the Bank Holding Company Act was designed to "prevent[ ] a holding company from being used by banking organizations to acquire commercial firms and to enter activities prohibited to banks themselves."[13]

The basis for these statutory restrictions is a longstanding U.S. principle that banking should not mix with other types of commerce.[14] This principle was first manifested in the charters issued to early banks operating within the United States; those charters typically prohibited banks from dealing in "merchandise."[15] New York bank charters, and later New York banking statutes, also expressly prohibited banks from "dealing or trading in … goods, wares, merchandise, [or] commodities."[16] Early U.S. courts generally interpreted the charter and legal restrictions narrowly, ruling that banks were prohibited from issuing mortgages, investing in real estate, purchasing stocks as an investment, or operating any non-bank, commercial business.[17] The purpose behind those prohibitions was generally to prevent banks from competing with

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Research Service. No. R41181 (4/12/2010) (hereinafter "2010 CRS Report on GSA and GLBA"), at 3 ("Banks are institutions of limited power: they may only engage in the activities permissible pursuant to their charter, which generally limits them to the 'business of banking' and all powers incidental to the business of banking.").

[11] See Bank Holding Company Act of 1956, P.L. 84-511, 70 Stat. 134 (1956). See also 1970 amendments, P.L. 91-607 (12/31/1970).

[12] Id.; 12 U.S.C. §1843(a) and (c)(8).

[13] "The Separation of Banking and Commerce in the United States: an Examination of Principal Issues," OCC Economics Working Paper 1999-1, Bernard Shull (hereinafter "Shull"), at 57-58, see also 19, http://www.occ.gov/publications/publications-by-type/economics-working-papers/1999-1993/wp99-1.pdf.

[14] See, e.g., "The Merchants of Wall Street: Banking, Commerce, and Commodities," Professor Saule Omarova, 98 Minnesota Law Review 265, 268 (2012) (hereinafter "The Merchants of Wall Street"); Shull at 12. The separation between banking and commerce in the United States has never, however, been absolute. Federal law has, for example, allowed commercial firms to own industrial banks, 12 U.S.C. §1841(c)(2)(H), and unitary thrift holding companies, 12 U.S.C. §1841(c)(2)(D), and has long permitted bank holding companies to retain small equity ownership stakes in non-financial corporations. 12 U.S.C. §1843(c)(6) and (7). A banking expert at a 2013 Senate hearing put it this way:

> "The principle of keeping banking separate from commerce can be a useful way to simplify the otherwise complex U.S. banking laws. Certainly, the basic structure of the National Bank Act and the [Banking Holding Company] Act reflects this general principle. But this general principle is not a binding legal rule and does not create an impermeable wall, and reasonable people can disagree as to where the line is and should be drawn."

Prepared testimony of Randall Guynn, counsel with Davis Polk & Wardell LLP, before U.S. Senate Committee on Banking, Housing and Urban Affairs, hearing on "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries," (7/23/2013)(hereinafter "Guynn Testimony"), at 20.

[15] Shull, at 12.

[16] Shull, at 13, footnote 29; see also id. at 15.

[17] Id. at 15-16. See also Investment Company Institute v. Camp, 401 U.S. 617 (1971) (analyzing "hazards" that arise when bank affiliates become involved with investment banking).

other types of businesses and from engaging in risky investments, limiting them instead to conducting a narrow range of banking activities.[18]

Bank Circumvention of Restrictions. U.S. banks have traditionally chafed under the legal limitations on their activities, and U.S. history is replete with examples of banks willfully circumventing them. One notorious example, in the early 1900s, involved Wall Street banks that established affiliates that dealt in securities, insurance, and real estate, and acquired ownership interests in a wide range of commercial businesses.[19] A few major banks formed so-called "trusts" that acted as holding companies for massive commercial enterprises, including businesses that handled physical commodities, such as railroads, oil companies, steel manufacturers, and shipping and mining ventures.[20] In 1901 and 1907, bank actions to acquire or trade stocks in commercial corporations contributed to chaotic stock prices and financial panics, triggering Congressional hearings and legislative reforms.[21]

Pujo Hearings. In 1912 and 1913, hearings held by a subcommittee of the U.S. House Committee on Banking and Currency, known as the "Pujo Committee" after Committee Chairman Arsene Pujo of Louisiana, confirmed allegations that some Wall Street banks had acquired control over major commercial enterprises critical to the U.S. economy, while also asserting control over "the money, exchange, security and commodity markets."[22] Among other matters, the hearings disclosed to the public that a handful of major Wall Street banks controlled hundreds of businesses in the areas of insurance, finance, transportation, and commodities; had set up interlocking directors with their fellow banks and trusts; had restrained competition; and had contributed to financial panics through massive stock trading, inadequate capital reserves, and bad loans.[23]

In response to the Pujo or "money trust" hearings as well as pressure from President Theodore Roosevelt, Congress enacted several laws to break up the banks' influence over the economy and increase bank regulation. The Clayton Antitrust Act of 1914, which strengthened the Sherman Antitrust Act of 1890, provided new tools to prevent monopolistic, anti-competitive

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[18] See Shull, at 10-12, 55. Professor Shull noted that the principle against mixing banking and commerce had roots as far back as the thirteenth and fourteenth centuries, writing that, in 1374, "the Venetian senate prohibited bankers from dealing in copper, tin, iron, lead, saffron, and honey … probably to keep banks from undertaking risky activities and monopolizing the specified commodities." Id. at 6.

[19] See, e.g., id. at 16; Investment Company Institute v. Camp, 401 U.S. at 630 ("[I]n 1908 banks began the practice of establishing security affiliates that engaged in, inter alia, the business of floating bond issues and, less frequently, underwriting stock issues.").

[20] See, e.g., The House of Morgan, Ron Chernow (Grove Press 1990), at 67-68 (railroad trusts), 81-86 (U.S. Steel trust), 100-103 (shipping trust), 109 (farm equipment trust), and 123 (copper trust).

[21] Id. at 91-93 (describing massive stock trades by JPMorgan's predecessor bank to acquire control of the Northern Pacific railroad in 1901, leading to dramatic price volatility in the railroad's stock price, financial panic by speculators who had shorted the stock, and the largest stock market crash in a century), and 122-128 (describing the 1907 financial panic which began with a collapse in copper prices and a corresponding plunge in United Copper stock prices which, in turn, undermined the financial stability of certain trust companies and banks, and threatened widespread economic damage).

[22] See "Money Trust Investigation: Financial and Monetary Conditions in the United States," hearing before a subcommittee of the House Committee on Banking and Currency (5/16/1912), HRG-1912-BCU-0017, Y4.B22/1:M74/2-1, http://congressional.proquest.com/congressional/docview/t29.d30.hrg-1912-bcu-0017?accountid=45340 (first of multiple days of hearings continuing into 1913), at 4.

[23] Id. See also, e.g., The House of Morgan, Ron Chernow (Grove Press 1990), at 150-156.

conduct.[24] The landmark Federal Reserve Act of 1913 established the Federal Reserve System to act as a central bank for the United States, required national banks to become members of the system, imposed capital and reserve requirements on them, and mandated OCC and Federal Reserve examinations to stop unsafe and unsound banking practices.[25] The Federal Reserve Act also modestly expanded bank activities by permitting foreign branches and certain loans secured by farmland, while leaving in place the general prohibition against banks engaging in commerce.[26]

Stock Market Crash of 1929. A dozen years later, the pendulum swung the other way, and banks gained new statutory authority, under the McFadden Act of 1927, to buy and sell marketable debt obligations and issue more types of real estate loans.[27] The OCC followed with regulations permitting federally chartered banks, through affiliates, to underwrite, buy, and sell both debt and equity instruments.[28] Those expansions in banking powers led to a rapid increase in bank participation in the securities markets, with banks acting on behalf of both clients and themselves.

Two years later came the stock market crash of 1929. The ensuing depression and economic turmoil led to the closure of thousands of banks. A subsequent investigation by a U.S. Senate Committee on Banking and Currency subcommittee, led in part by subcommittee counsel Ferdinand Pecora, pointed to bank involvement in non-banking activities as a key contributor to the market's collapse, including the underwriting and trading of questionable securities, the repackaging of poorly performing foreign loans into bonds sold to the public, and in the case of one bank, providing new stocks at below market prices to Administration officials, Members of Congress, and businessmen considered to be friends of the bank.[29] The Pecora hearings examined a wide range of banking activities, but did not highlight problems with commodities.

Glass-Steagall Act of 1933. In response to the bank closures and Great Depression that followed the stock market crash, Congress enacted several laws that reinstated restrictions on bank activities. The most prominent was the Banking Act of 1933, also known as the Glass-Steagall Act after the Congressmen who championed key provisions.[30] The Glass-Steagall Act explicitly prohibited U.S. banks from dealing in securities or establishing subsidiaries or

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[24] Clayton Antitrust Act of 1914, P.L. 63-212.
[25] Federal Reserve Act of 1913, P.L. 63-43.
[26] Id. See also Shull, at 17.
[27] McFadden Act of 1927, P.L. 69-639, §§2(b) and 16.
[28] See Shull, at 17.
[29] See, e.g., "Stock Exchange Practices," report of the U.S. Senate Committee on Banking and Currency, S. Hrg. 73-1455, (6/6/1934), http://fraser.stlouisfed.org/publications/sensep/issue/3912/download/59691/sensep_report.pdf, and associated hearings from January 1933 to May 1934 (known as the Pecora hearings); The House of Morgan, Ron Chernow (Grove Press 1990), at 352-373; Investment Company Institute v. Camp, 401 U.S. at 630-631 ("Congress was concerned that commercial banks in general and member banks of the Federal Reserve System in particular had both aggravated and been damaged by [the] stock market decline partly because of their direct and indirect involvement in the trading and ownership of speculative securities."). The Pecora hearings also disclosed other problematic bank conduct, including substantial bank loans given to bank officers and later forgiven; interlocking directors with other banks and trust companies; and nonpayment of taxes by wealthy bankers.
[30] Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933). Senator Carter Glass (D-Virginia) was then a member of the Senate Committee on Banking and Currency as well as Chairman of the Appropriations Committee; Congressman Henry B. Steagall (D-Alabama) was chairman of the House Committee on Banking and Currency.

affiliates that dealt in securities.[31] It also prohibited banks from engaging in securities transactions undertaken "for its own account" rather than on behalf of a client.[32] In addition, the law established the federal deposit insurance system to safeguard bank deposits.[33]

The new Glass-Steagall prohibitions compelled major U.S. banks to terminate or divest themselves of their securities trading operations as well as other prohibited activities.[34] Two prominent banks that spun off their securities operations were J.P. Morgan & Co. and First Boston.[35] The result was that the banking community essentially split into two groups, commercial banks which offered deposits, checking services, mortgages, and loans; and investment banks which traded securities and invested in new businesses.

Bank Holding Company Act of 1956. In 1956, Congress enacted the Banking Holding Company Act (BHCA). According to a 2012 study by the Federal Reserve Bank of New York:

> "A key original goal of the BHCA was to limit the comingling of banking and commerce, that is, to restrict the extent to which BHCs or their subsidiaries could engage in nonfinancial activities (more details and historical background are found in Omarova and Tahyar, forthcoming; Santos 1998; Aharony and Swary 1981; and Klebaner 1958). This separation is intended to prevent self-dealing and monopoly power through lending to nonfinancial affiliates and to prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank's core financial activities, such as lending and deposit-taking (Kroszner and Rajan 1994; Klebaner 1958). To further enhance stability, BHCs are also required to maintain minimum capital ratios and to act as a 'source of strength' to their banking subsidiaries, that is, to provide financial assistance to banking subsidiaries in distress."[36]

Gramm-Leach-Bliley Act. Banks and bank regulators respected the Bank Holding Company Act and Glass-Steagall prohibitions for more than 40 years, and U.S. banking flourished. By the 1970s, however, some banks began pressing regulators and Congress to allow them once more to engage in a wider array of commercial and financial activities, including dealing in securities, insurance, and, for the first time, the growing field of derivatives.[37] In response to bank pressure, the OCC and Federal Reserve began weakening the Glass-Steagall restrictions, in particular by expanding the securities and derivatives activities considered to be within the "business of banking" or "incidental" to banking.[38] In 1998, in direct defiance of Glass-Steagall prohibitions, Citibank announced that it intended to merge with the Travelers

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[31] Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §§16, 20, 21, and 32.
[32] Id. at §16.
[33] Id. at §8.
[34] See, e.g., The House of Morgan, Ron Chernow (Grove Press 1990), at 384-386; Shull at 18.
[35] Id.
[36] "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (7/2012), at 3; http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf [footnotes omitted].
[37] See 2010 CRS Report on GSA and GLBA, at 8, 28.
[38] See id. at 8-15; The Merchants of Wall Street, at 279; Shull at 20, 24. The Office of the Comptroller of the Currency has published a comprehensive listing of the various activities related to derivatives that national banks are authorized to engage in. See Comptroller of the Currency, "Activities Permissible for a National Bank, Cumulative" (April 2012), at 57-64.

insurance group, and pressed bank regulators and Congress to allow it to create what it described as the largest financial services company in the world.[39]

In 1999, faced with Citibank's planned merger, regulatory actions that undercut the Glass-Steagall prohibitions, and a rapidly changing banking landscape in which banks were conducting an expanding variety of financial activities, Congress enacted the Financial Modernization Act of 1999. This law is commonly referred to as the Gramm-Leach-Bliley Act after the Congressmen who championed its enactment.[40] The new law repealed key Glass-Steagall restrictions on banks and widened the activities authorized for bank holding companies.[41] In particular, the law explicitly authorized commercial banks to affiliate with other types of financial companies using a new "financial holding company" structure.

Under the new structure, a bank holding company could elect to also become a "financial holding company" and own, not only one or more banks, but also any other type of company that the Federal Reserve determined was "financial in nature," "incidental" to a financial activity, or "complementary" to a financial activity, if certain conditions were met.[42] In addition, the law explicitly authorized bank holding companies to engage in "merchant banking," meaning they could buy ownership interests in any company as a private equity investment, so long as the bank did not try to operate the business itself and held it as a passive investment for a limited period of time.[43] Together, these provisions significantly weakened the longstanding separation of banking and commerce.

The Gramm-Leach-Bliley Act authorized all existing bank holding companies that met certain capital and operating requirements to elect to become financial holding companies.[44] In

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[39] See, e.g., "Citicorp and Travelers Plan to Merge in Record $70 Billion Deal: A New No. 1: Financial Giants Unite," Mitchell Martin, New York Times (4/7/1998). http://www.nytimes.com/1998/04/07/news/07iht-citi.t.html; "Citicorp-Travelers Merger Shakes Up Wall Street Rivals," Patrick McGeehan and Matt Murray, Wall Street Journal (4/7/1998), http://online.wsj.com/article/SB891903040436602000.html.

[40] Financial Services Modernization Act of 1999, P.L. 106-102 (1999). Senator Phil Gramm (R-Texas) was then Chairman of the Senate Committee on Banking, Housing and Urban Development. Congressman Jim Leach (R-Iowa) was Chairman of the House Committee on Banking and Financial Services. Congressman Tom Bliley (R-Virginia) was Chairman of the House Committee on Commerce.

[41] See "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (July 2012), at 3, http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf .

[42] See Section 4(k) of the Bank Holding Company Act, as amended by the Gramm-Leach-Bliley Act, which states that a financial holding company:

> "may engage in any activity, and may acquire and retain the shares of any company engaged in any activity, that the [Federal Reserve] Board [...] determines (by regulation or order) --
>
> (A) to be financial in nature or incidental to such financial activity; or
>
> (B) is complementary to a financial activity and does not pose a substantial risk to the safety or soundness of depository institutions or the financial system generally."

12 U.S.C. §1843(k). The Gramm-Leach-Bliley Act also authorized banks, subject to certain conditions, to own or control their own "financial subsidiaries" when established to engage in "'activities that are financial in nature or incidental to financial activity,' as well as 'activities that are permitted for national banks to engage in directly.'" 2010 CRS Report on GSA and GLBA, at 20-21; 12 U.S.C. §24a(a)(2)(A).

[43] See 12 U.S.C. §1843(k)(4)(H).

[44] See 12 U.S.C. §1843(k)(1). To become a financial holding company, a bank holding company had to meet a list of statutory criteria, including that it and its subsidiary banks were well capitalized and well managed. 12 C.F.R.

addition, the law allowed bank holding companies or other firms that, after enactment of the law, sought to become a financial holding company, to "grandfather" in certain prior holdings and businesses rather than divest them.[45] Today, "virtually all" large bank holding companies are also registered as financial holding companies.[46]

In 2000, Congress enacted another law, the Commodities Futures Modernization Act, which prohibited all federal regulation of the leading type of derivative known as a "swap."[47] Derivatives are financial instruments that derive their value from another asset.[48] Swaps are generally bilateral contracts in which two parties essentially make a bet on the future value of a specified financial instrument, interest rate, or currency exchange rate. By prohibiting federal regulation of swaps, among other consequences, the law effectively authorized banks to engage in an unrestricted array of swap activities, including swaps linked to commodities. That law, like the Gramm-Leach-Bliley Act, further undermined the separation of banking from commerce.

Together, the Gramm-Leach-Bliley Act and the Commodities Futures Modernization Act authorized U.S. banks to engage in many financial activities that had been denied to them under the Glass-Steagall Act, including activities that essentially mixed banking with commercial activities. Major U.S. bank holding companies soon attained financial holding company status and began to affiliate with securities and insurance firms. The resulting financial conglomerates expanded into multiple financial activities, including many that were high risk. Less than ten years later, major U.S. banks triggered the financial crisis that devastated the U.S. economy and from which the country is still recovering.[49]

(2) U.S. Banks and Commodities

For the first 150 years banks operated in the United States, commodities played a very limited role in bank activities. It was not until the 1980s, with the invention of energy-based commodities that could be traded in futures and swaps markets, that U.S. banks began dealing in U.S. commodities in a substantial way. Over time, with the acquiescence of federal bank

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§225.82(a) (2013). For a current list of all bank holding companies that have elected to become financial holding companies, see http://www.federalreserve.gov/bankinforeg/fhc.htm.

[45] See, e.g., 12 U.S.C. §1843(n) and (o).

[46] "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (July 2012), at 3; http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf .

[47] The 2000 Commodity Futures Modernization Act was enacted as a title of the Consolidated Appropriations Act of 2001, P.L. 106-554.

[48] See U.S. Securities and Exchange Commission website, http://www.sec.gov/answers/derivative.htm.

[49] For more information on key causes of the financial crisis, see "Wall Street and the Financial Crisis," hearings before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 111-671 to 111-674, Volumes 1-5 (April 13, 2010); "Wall Street and the Financial Crisis: Anatomy of a Financial Collapse," a bipartisan report by the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 112-675, Volume 5, (April 13, 2011). See also prepared testimony of Joshua Rosner, managing director of Graham Fisher & Co., before U.S. Senate Committee on Banking, Housing and Urban Affairs, hearing on "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries," (7/23/2013)(hereinafter "Rosner Testimony"), at 3 ("While the actions of many parties … led us to [the financial] crisis the fact remains that structured products innovated and sold as a result of the combination of commercial and investment banking, devastated Main Street USA and ravaged consumers and businesses alike. Banks, which had previously been prevented from investment banking activities, had stimulated demand for faulty mortgage products.").

regulators, a handful of major U.S. banks began, not only to develop and trade in commodity-based financial instruments, but also to take ownership interests in, or exert control over, businesses handling physical commodities. Today, banks are major players in U.S. commodities markets, not only dominating the trading of commodity-related futures, options, swaps, and securities, but also owning or exercising control over businesses that produce, store, transport, refine, supply, and utilize physical commodities. Those commodities include oil products, natural gas, coal, metals, agricultural products, and electricity.

Early History of Limited Bank Involvement in Commodities. Some experts contend that, because banks handle money, they have a long history of dealing with commodities, highlighting commodities that represent "an efficient medium of exchange and store of value," such as gold and silver bullion.[50] While that exception to the rule is true, for most of U.S. history, U.S. banks were not major players in commodity markets.

The first commodities exchange established in the United States was the Chicago Board of Trade (CBOT) which opened in 1848, as a central marketplace for the buying and selling of grain.[51] Almost twenty years later, in 1865, CBOT developed the first standardized futures contracts that could be traded on the exchange.[52] Over the next 100 years, the commodities traded on U.S. exchanges grew to encompass a variety of agricultural products. The resulting trade in futures and options was viewed as a specialized business generally handled by large agricultural companies and commodity brokers, not banks.[53]

At times, especially during the last decade of the nineteenth century and the first decade of the twentieth century, a handful of major banks acquired ownership interests in businesses that handled physical commodities, including railroads, oil companies, and shipping and mining ventures. But bank ownership of those businesses largely halted after the Pujo money trust hearings and the enactment of restrictions on bank activities. During the 1920s, many banks began trading stocks and bonds, but largely ignored the agriculturally-based commodity exchanges. When Congress enacted the first major federal commodities law, the Grain Futures Act of 1922, banks were not even mentioned in the statute.[54]

When banking reforms were put into place after the stock market crash of 1929, commodities were, again, hardly mentioned in the new statutes, given the paucity of bank involvement with commodities. The Glass-Steagall Act of 1933, for example, mentioned commodities only once, in a section that established a Federal Reserve oversight responsibility to prevent banks from facilitating undue speculative activity through the issuance of bank credit. That section directed each regional Federal Reserve Bank to:

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[50] See, e.g., Guynn Testimony, at 15-16.
[51] See CME Group "Timeline of Achievements," http://www.cmegroup.com/company/history/timeline-of-achievements.html.
[52] Id.
[53] See, e.g., Merchants of Grain by Dan Morgan (Viking Press 1979)(tracing grain trading and commodities markets in the United States from the 1800s to the 1970s, and describing the roles played by five major grain merchants, but making no mention of U.S. banks as market participants).
[54] See Grain Futures Act of 1922, P.L. 67-331.

> "keep itself informed of the general character and amount of the loans and investments of its member banks with a view to ascertaining whether undue use is being made of bank credit for the speculative carrying of or trading in securities, real estate, or commodities, or for any other purpose inconsistent with the maintenance of sound credit conditions."[55]

The Glass-Steagall Act also directed each Federal Reserve Bank to report "any such undue use of bank credit by any member bank" to the Federal Reserve Board.[56] No provision addressed any other aspect of bank trading in commodities. Similarly, the landmark Commodities Exchange Act of 1936, which revamped federal law on commodities markets, mentioned banks only in passing in a single provision allowing commodity brokers to commingle customer funds in their corporate bank accounts.[57]

Further evidence of bank noninvolvement with commodities comes from extensive bank statistics compiled by the Federal Reserve over a 60-year period, from 1896 to 1955.[58] The report published by the Federal Reserve includes a four-page list of banking activities that occurred during those years, but nowhere mentions commodities.[59]

Banks Begin Trading Financial Commodities. It was not until decades later, when U.S. commodity exchanges began to undergo fundamental change, that banks and other financial firms began to participate in them. The primary change was an expansion of the concept of commodities to encompass more than agricultural products. The first expansion occurred during the 1970s, when commodity exchanges developed standardized foreign currency and interest rate futures and options contracts that could be traded on the exchanges.[60]

In 1979, Goldman Sachs, then a securities firm and not a bank, registered with the Commodity Futures Trading Commission (CFTC), regulator of U.S. futures markets, as a "Futures Commission Merchant" (FCM) and received authorization to buy and sell futures and options on regulated exchanges.[61] Three years later, in 1982, Goldman expanded its commodity operations by purchasing J. Aron & Co., a commodities trading firm that has since become

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[55] Banking Act of 1933, P.L. 73-66, 48 Stat. 162 (1933), §3.
[56] Id.
[57] See Commodities Exchange Act of 1936, P.L. 74-674, §5.
[58] See "All-Bank Statistics United States 1896 - 1955," prepared by the Board of Governors of the Federal Reserve System, (April 1959), Federal Reserve Archives. http://fraser.stlouisfed.org/docs/publications/allbkstat/1896-1955/us.pdf (containing historical banking data).
[59] Id. at Appendix E, "Composition of Asset and Liability Items," at 85 - 89.
[60] See, e.g., CME Group "Timeline of Achievements," http://www.cmegroup.com/company/history/timeline-of-achievements.html (CME introduced the first foreign currency contracts in 1972, and the first interest rate future in 1975); Fool's Gold, Gillian Tett (Free Press 2009), at 10-11.
[61] See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y. For more information on Futures Commission Merchants, see NFA "Glossary," http://www.nfa.futures.org/basicnet/glossary.aspx?term=futures+commission+merchant (defining FCM as "[a]n individual or organization which solicits or accepts orders to buy or sell futures or options contracts and accepts money or other assets from customers in connection with such orders. Must be registered with the Commodity Futures Trading Commission."). The OCC authorized banks to become commodity exchange members as early as 1975, according to an unpublished letter cited in OCC Interpretative Letter No. 380 (12/29/1986), reprinted in Banking L. Rep. CCH ¶ 85, 604. See also 2010 CRS Report on GSA and GLBA, at 10-11, footnote 54.

Goldman's principal commodities trading subsidiary.[62] Goldman initially directed J. Aron & Co. to expand into the trading of interest rate and currency futures.[63]

In 1982, the OCC explicitly authorized national banks to execute and clear trades in futures contracts.[64] Both JPMorgan[65] and Morgan Stanley,[66] which were not then national banks or regulated by the OCC, registered as FCMs that year. In 1983, the OCC took the next step and authorized banks to execute and clear exchange-traded options.[67]

That same year, the New York Mercantile Exchange (NYMEX), a leading U.S. commodities exchange, introduced the first standardized futures contracts for crude oil and heating oil.[68] They were the first energy-related futures traded on a regulated exchange. Additional standardized futures contracts for natural gas and electricity products followed, and futures and options trading expanded rapidly.[69] In 1986, the OCC issued a series of letters interpreting the "business of banking" clause of the National Bank Act to permit national banks to engage in a widening range of commodity-related trading activities.[70]

Also in 1986, Chase Manhattan Bank and Koch Industries reportedly entered into the first oil-related swap, introducing the concept of swaps linked to the price of a physical commodity.[71]

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[62] See Goldman Sachs' response to the Subcommittee questionnaire (8/8/2014); PSI-Goldman-11-000001 - 011, at 002.

[63] See The Partnership: The Making of Goldman Sachs. Charles D. Ellis (Penguin Books 2008), at 252-254.

[64] OCC Interpretive Letter (7/23/1982), unpublished.

[65] See JP Morgan Futures Inc. FCM information, NFA BASIC website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=jSzQxZANWxY%3d&rn=Y. That FCM license was withdrawn in 2011. Id. JP Morgan Securities LLC also holds the FCM license that Bear Stearns obtained in 1982. See JP Morgan Securities LLC FCM information. NFA BASIC website, http://www.nfa.futures.org/BasicNet/Details.aspx?entityid=7YD6PX%2bm0vo%3d.

[66] See Morgan Stanley & Co. LLC FCM information. NFA BASIC website. http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N.

[67] OCC Interpretive Letter No. 260 (6/27/1983). See also OCC Interpretive Letter No. 896 (8/21/2000)(national bank may purchase options on futures contracts on commodities to hedge the credit risk in its agricultural loan portfolio).

[68] See "NYMEX Energy Complex," prepared by NYMEX, at 7. http://www.kisfutures.com/NYMEX-energy-complex.pdf. See also, e.g., Oil: Money, Politics, and Power in the 21st Century, Tom Bower (Grand Central Publishing 2009), at 47.

[69] See, e.g., David B. Spence & Robert Prentice. "The Transformation of American Energy Markets and the Problem of Market Power," 53 B.C. L. Rev. 131, 152 (2012).

[70] See, e.g., OCC Interpretive Letter No. 356 (1/7/1986) (authorizing a bank subsidiary to trade agricultural and metal futures for clients seeking to hedge bank loans); OCC Interpretive Letter No. 372 (11/7/1986) (authorizing a bank subsidiary to act as a broker-dealer and market maker for exchange-traded options for itself, its affiliated bank, and clients); OCC Interpretive Letter No. 380 (12/29/1986), reprinted in Banking L. Rep. CCH ¶ 85,604 (authorizing a bank to provide margin financing to its clients to trade commodities; execute and clear client transactions involving futures and options in gold, silver, or foreign currencies on exchanges and over the counter; and direct a subsidiary to become a commodities exchange member). See also "Activities Permissible for a National Bank, Cumulative," prepared by the OCC (April 2012), at 57-64 (listing permissible derivative-based activities for national banks).

[71] See "Oil Derivatives: In the Beginning," EnergyRisk magazine (July 2009), at 31, http://db.riskwaters.com/data/energyrisk/EnergyRisk/Energyrisk_0709/markets.pdf. The swap was a bilateral contract in which, for a four-month period, one party agreed to make payments to the other for 25,000 barrels of oil per month using a fixed price per barrel, while the other party agreed to make payments using the average monthly spot price for oil.

Other commodity swaps followed, creating a rapidly expanding over-the-counter commodities market in derivatives, separate and apart from the regulated commodity exchanges.

In 1987, in response to a request, the OCC authorized national banks to engage in transactions involving commodity price index swaps.[72] The OCC authorized the activity even though banks were still prohibited from directly investing in physical commodities.[73] A later OCC Handbook explained:

> "A national bank may also enter into derivative transactions as principal or agent when the bank is acting as a financial intermediary for its customers and whether or not the bank has the legal authority to purchase or sell the underlying instrument for its own account. Accordingly, a national bank may enter into derivative transactions based on commodities or equity securities, even though the bank may not purchase (or may be restricted in purchasing) the underlying commodity or equity security for its own account."[74]

At first, the OCC allowed banks to enter into commodity index swaps only on a "matched" basis to offset risk,[75] but over time relaxed that as well as other, earlier restrictions.[76]

In 1991, Goldman Sachs, again operating solely as an investment bank, launched the Goldman Sachs Commodity Index whose value reflected price changes in a broad basket of commodity futures.[77] Over the next few years, commodity index trading exploded, accompanied by a sharp increase in futures trading used to hedge the index transactions.[78]

Expansion into Physically-Settled Transactions. At the same time some commercial and investment banks deepened their involvement with commodity-linked financial instruments, some began increasing their involvement with physical commodities. One reason was that some commodity futures contracts, including those involving crude oil, natural gas, and electricity, allowed transactions to be settled financially or through physical delivery of the specified

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[72] See OCC No-Objection Letter No. 87-5 (7/20/1987).

[73] See, e.g., OCC Interpretive Letter No. 652 (9/13/1994), at 5.

[74] "Risk Management of Financial Derivatives," Comptroller's Handbook (1997), at 68. http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/deriv.pdf.

[75] See OCC No-Objection Letter No. 87-5 (7/20/1987)(authorizing the bank to act as a principal in commodity price index swaps with clients only on a "matched basis" in which the bank's commodity price index contract with a commodity "user" was offset by an index contract with a commodity "producer," so that "the Bank would be matched as to index, amount and maturity on each side of the transaction").

[76] See, e.g., OCC No-Objection Letter No. 90-1 (2/16/1990), reprinted in Banking L. Rep. CCH ¶ 83,095 (authorizing the bank to engage as a principal in unmatched commodity index swaps with its clients so long as the swaps were cash settled); OCC Interpretive Letter No. 507 (5/5/1990)(authorizing a bank subsidiary to execute all types of commodity futures and options for all types of customers, whether or not hedging a bank loan); OCC Interpretive Letter (3/2/1992)(authorizing bank to engage in unmatched commodity index swaps, warehouse the swap contracts, and hedge them on a portfolio basis).

[77] See "S&P GSCI Commodity Index," prepared by Goldman Sachs, http://www.goldmansachs.com/what-we-do/securities/products-and-business-groups/products/gsci/. In 2007, Goldman Sachs transferred the index to Standard & Poor's. In 2012, the index was acquired by S&P Dow Jones Indices LLC, a subsidiary of The McGraw-Hill Companies. See "Our History," prepared by S&P Dow Jones Indices, http://us.spindices.com/about-sp-indices/our-history/.

[78] See, e.g., "Excessive Speculation in the Wheat Market," Permanent Subcommittee on Investigations, S. Hrg. 111-155, report at 168-171.

commodity. Some banks wanted to be able to settle futures contracts through physical delivery, contending that physical settlements would give them more flexibility, enable them to engage in more effective hedging with lower risks and costs, and enable them to compete more effectively in commodities markets.[79]

In response, in 1993, the OCC issued an interpretive letter which greatly expanded the ability of banks to engage in physical commodity transactions. The letter interpreted the banking powers clause to allow national banks to hedge permissible banking activities by making or taking "physical delivery of commodities," including by taking or delivering documents providing title to the commodities, such as warehouse receipts or warrants.[80] In addition, the OCC explicitly authorized banks to engage in related physical commodity activities such as "storing, transporting, and disposing of the commodities."[81]

The 1993 OCC letter stated that banks could use physically-settled transactions only to "reduce risk" and only when they would "provide a more accurate hedge than available exchange-traded or over-the counter transactions."[82] The OCC required the physically-settled transactions to be "customer-driven," prohibited their use for "speculative purposes," and stated that they should constitute "only a nominal percentage of a bank's hedging activities."[83] To limit the associated risks, the OCC required the bank to develop management expertise and internal controls to ensure safe and sound banking practices, submit a "detailed plan" to the OCC, and obtain "prior written authorization" by the OCC's supervisory staff before going forward.[84]

In 1995, the OCC issued another interpretive letter giving banks broad authority to engage in physically-settled transactions involving metals, as well as to engage in "ancillary activities" such as storing, transporting, and disposing of the physical commodities.[85] The OCC expressed approval of banks taking delivery of the physical commodities through warehouse receipts or transitory title transactions, noting that "[i]n no case would the Bank take delivery by receipt of physical quantities ... on Bank premises."[86] The OCC letter directed the bank to establish risk management procedures in accordance with Banking Circular 277, which had been issued earlier that year, and also required the bank to implement the additional safeguards first identified in the 1993 letter.[87]

At the time, the Federal Reserve chose not to follow the OCC's lead in expanding bank involvement with physical commodities. Instead, in 1997, while the Federal Reserve amended

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[79] See, e.g., OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366, at 359-361; OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374, at 372.
[80] OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 – 366, at 358-359.
[81] Id. at 361. See also OCC Interpretive Letter No. 935 (5/14/2002), PSI-OCC-01-000170, at 173 (warning about additional storage, transportation, environmental, and insurance risks posed by physical commodity transactions).
[82] OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358, at 358, 365.
[83] OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 368-369.
[84] OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358, at 358, 366.
[85] See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 372-374. See also OCC Interpretive Letter No. 1073 (10/19/2006), PSI-OCC-01-000425 - 432 (allowing banks and their foreign branches to engage in "customer-driven, metal derivative transactions that settle in cash or by transitory title transfer"); OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (allowing banks to buy and sell physical copper).
[86] OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368, at 369.
[87] Id. at 370, 373-374.

its Regulation Y to broaden the list of permissible bank holding company activities, it declined at that point to grant bank holding companies broad authority to participate in physically-settled commodity transactions.[88] Instead, the Federal Reserve continued to generally limit bank holding companies to trading in cash-settled commodity transactions. Despite that setback, banks continued to lobby for broader authority to conduct physical commodity transactions.

Gramm-Leach-Bliley Expansion. More fundamental change came two years later, in 1999, when Congress enacted the Gramm-Leach-Bliley Act. That Act created the financial holding company structure described earlier and authorized banks to affiliate with subsidiaries engaged in a wider array of financial activities, including trading in commodities.

The law contained four provisions which dramatically increased the ability of banks, through their financial holding companies, to engage in physical commodities transactions and related businesses. First, the law allowed financial holding companies to engage in any activity which the Federal Reserve determined was "financial in nature" or "incidental to a financial activity."[89] Second, the law enabled a financial holding company to engage directly in any nonfinancial, commercial activity which the Federal Reserve determined to be "complementary" to a financial activity.[90] The Federal Reserve later interpreted that provision to allow financial holding companies to engage in activities involving physical commodities.[91] Third, the law allowed financial holding companies to exercise so-called "merchant banking" authority to make a temporary, passive equity investment in any type of commercial company, including firms involved with physical commodities.[92] Finally, the law included a special grandfathering provision that allowed certain financial firms that later became financial holding companies to continue any commodities activities they had undertaken, directly or indirectly, in the United States on or before September 30, 1997.[93]

According to one analysis, "[s]oon after the enactment of [the Gramm-Leach-Bliley Act], the largest U.S. [financial holding companies] began using their new powers to build physical commodity trading businesses."[94]

By the time the Gramm-Leach-Bliley Act was enacted in 1999, banks and bank holding companies had already become interested in expanding their commodity activities for a number of reasons. Earlier in the decade, Enron Corporation, then a leading U.S. energy company, had popularized the concept of energy "commodities" that could be traded like stocks and futures. From 1992 until its collapse in 2001, Enron convinced a number of large U.S. banks to finance or participate in its energy commodity trades, including entering into over $8 billion in energy trades with Citigroup and JPMorgan Chase Bank in transactions later exposed as hidden loans.[95] In 1999, Enron also launched an energy commodities electronic trading platform known as

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[88] 62 Fed. Reg. 9290, 9311 (Feb. 28, 1997).
[89] 12 U.S.C. §1843(k).
[90] 12 U.S.C. §1843(k)(1)(B). The law also defined "financial activity" by referencing the activities that the Federal Reserve determined were "closely related to banking," in Regulation Y. 12 C.F.R. §225.28(a).
[91] See descriptions of Federal Reserve orders, below.
[92] 12 U.S.C. §1843(k)(4)(H).
[93] 12 U.S.C. §1843(o); Gramm-Leach-Bliley Act amendment of the Bank Holding Company Act, adding §4(o).
[94] The Merchants of Wall Street, at 26.
[95] See "The Role of the Financial Institutions in Enron's Collapse – Volume 1," Permanent Subcommittee on Investigations, S. Hrg. 107-618, (July 23 and 30, 2002), at 231, 264.

EnronOnline to trade energy commodities involving natural gas and electricity.[96] By 2001, EnronOnline was the leading U.S. energy trading platform.[97] After Enron's collapse, the platform was sold and later closed,[98] and some Enron traders were convicted of using the platform and other schemes to manipulate electricity prices in the western United States.[99] Prior to that ignoble end, however, Enron's activities had hastened the development of energy commodities and bank involvement with them.

Further Expansion. In 2000, Congress enacted the Commodities Futures Modernization Act (CFMA) which, as explained earlier, barred all federal regulation of swaps, making it difficult for federal bank regulators to restrict trading of commodity swaps by banks and their holding companies.[100] The CFMA also barred CFTC oversight of energy and metal commodity trades executed on electronic exchanges used by large traders.[101] That same year, several investment banks, including Goldman Sachs and Morgan Stanley, joined with major oil companies to establish the Intercontinental Exchange (ICE), an electronic exchange specializing in commodity-related swaps.[102] Over the next decade, ICE would grow into a leading commodities exchange.

Around the same time, some banks and financial holding companies began to deepen their involvement with electricity markets. Beginning in 2002, the OCC issued a series of interpretive letters expanding bank authority to participate in electricity derivatives and related businesses. Among other measures, the OCC allowed banks to hedge their transactions by taking title to electricity commodities,[103] acquire royalty interests in energy reserves, and use

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[96] For more information about Enron Online, see "Asleep At the Switch: FERC's Oversight of Enron Corporation," U.S. Senate Committee on Governmental Affairs, S. Hrg. 107-854, (November 12, 2002), Volumes I-IV, at 238-245.

[97] Id. at 238.

[98] In 2002, Enron's trading business was purchased by UBS Warburg, which closed it less than a year later. See, e.g., "UBS Closing Trading Floor It Acquired From Enron," New York Times, David Barboza (11/21/2002), http://www.nytimes.com/2002/11/21/business/ubs-closing-trading-floor-it-acquired-from-enron.html?pagewanted=print&src=pm.

[99] For more information about Enron's manipulation of electricity prices, see "Asleep At the Switch: FERC's Oversight of Enron Corporation," U.S. Senate Committee on Governmental Affairs, S. Hrg. 107-854, (November 12, 2002), Volumes I-IV, at 251-260.

[100] Commodity Futures Modernization Act, Title I, Consolidated Appropriations Act of 2001, P.L. 106-554.

[101] See Section 2(h)(3) of the Commodity Exchange Act, added by CFMA, codified at 7 U.S.C. §2(h)(3). This exemption was known as the "Enron loophole," because it was included in CFMA at the request of Enron and others, and once in place, exempted from federal oversight the energy and metals contracts traded on Enron Online. See "Excessive Speculation in the Natural Gas Market," Permanent Subcommittee on Investigations, S. Hrg. 110-235 (6/24 and 7/9/2007), at 204, 246-247. The Enron Loophole was later closed. See CFTC Reauthorization Act of 2008, Title XIII of the Food, Conservation, and Energy Act of 2008, P.L. 110-246 (2008); Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, P.L. 111-203 (2010).

[102] See "U.S. Strategic Petroleum Reserve: Recent Policy Has Increased Costs to Consumers but Not Overall U.S. Energy Security," Minority Staff Report, Permanent Subcommittee on Investigations, S. Prt. 108-18 (3/5/2003), at 42-43; information provided by Morgan Stanley's legal counsel to the Subcommittee (9/29/2014). The firms who formed ICE were BP Petroleum, Dean Witter, Deutsche Bank, Goldman Sachs, Morgan Stanley, Royal Dutch/Shell Group, SG Investment Bank, and Totalfina Elf Group. The OCC also issued several interpretive letters allowing banks to become members of ICE, ICE Europe, and ICE Trust. See, e.g., OCC Interpretive Letter No. 1113 (3/4/2009); OCC Interpretive Letter No. 1116 (5/6/2009); OCC Interpretive Letter No. 1122 (7/30/2009).

[103] See, e.g., OCC Interpretive Letter No. 937 (6/27/2002)(allowing banks to engage in customer-driven, cash-settled derivatives based on electricity prices and in related hedging activities); OCC Interpretive Letter No. 962 (4/21/2003) (allowing banks to engage in "customer-driven, electricity derivative transactions that involve transfer

reserve royalty payments to repay loans extended to the reserve owner.[104] The OCC also authorized national banks to make merchant banking investments in energy-related businesses.[105] Along the way, the OCC continued to approve bank requests to deal in additional types of commodities.[106]

Still another change came as commercial and investment banks began to devise new types of securities whose values were linked to commodities. Those securities could then be traded on U.S. stock exchanges rather than on the less well known and more expensive commodity exchanges. In some cases, the security explicitly referenced a specific commodity future; in other cases, it referenced a broad-based index. In still other cases, the value of the security was supported by an inventory of commodity futures or an inventory of physical commodities. For example, the first commodity-based Exchange Traded Fund (ETF) in the United States,[107] backed by gold futures, was traded on the New York Stock Exchange in November 2004.[108] Since then, multiple ETFs backed by commodity futures or physical commodities have been approved.[109] The Securities and Exchange Commission has also approved the trading of futures and options referencing commodity-based ETFs.[110] Designing, selling, and trading commodity-based securities further deepened bank involvement with commodities.

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of title to electricity"): OCC Interpretive Letter No. 1025 (4/6/2005) (allowing banks to engage in "customer-driven electricity derivative transactions and hedges, settled in cash and by transitory title transfer").

[104] See OCC Interpretive Letter No. 1117 (5/19/2009) (allowing banks to issue credit to an electricity producer in return for receiving a limited royalty interest in the producer's hydrocarbon reserves and receiving payments from the energy produced from those reserves over a stated term, so-called "Volumetric Production Payment" loans). See also OCC Interpretive Letter No. 1071 (9/6/2006) (allowing banks to become members of Independent Systems Operators and Regional Transmission Organizations that oversee electricity transactions).

[105] See, e.g., OCC Community Development Investment Letter No. 2005-3 (7/20/2005)(construction and operation of ethanol plant); OCC Community Development Investment Letter No. 2008-1 (7/31/2008)(development of solar energy facilities); OCC Community Development Investment Letter No. 2009-6 (12/16/2009)(installation of photovoltaic systems in low-income housing); OCC Community Development Investment Letter No. 2011-2 (12/15/2011)(construction of wind turbines).

[106] See, e.g., OCC Interpretive Letter No. 1040 (9/15/2005)(allowing banks to engage in "customer-driven physically settled derivative transactions in emission allowances"); OCC Interpretive Letter No. 1060 (4/26/2006)(allowing banks to engage in "customer-driven coal derivative transactions that settle in cash *or* by transitory title transfer and that are hedged on a portfolio basis with derivative and spot transactions that settle in cash *or* by transitory title transfer")(emphasis in original); OCC Interpretive Letter No. 1065 (7/24/2006)(allowing banks to engage in cash-settled derivative transactions referencing "petroleum products, agricultural oils, grains and grain derivatives, seeds, fibers, foodstuffs, livestock/meat products, metals, wood products, plastics and fertilizer").

[107] For more information on exchange traded funds, see NYSE Explanation of ETFs, http://www.nyse.com/pdfs/ETFs7109.pdf, or SEC statement regarding ETFs, http://www.sec.gov/answers/etf.htm.

[108] See NYSE Information Memo Number 04–59 (November 18, 2004) (trading of streetTRACKS Gold Shares; Rules 1300 and 1301); Securities Exchange Act Release No. 50603 (October 28, 2004), 69 FR 64614 (November 5, 2004) (approval of the listing and trading of streetTRACKS Gold Shares). See also OCC Interpretive Letter No. 1013 (1/7/2005)(authorizing banks to buy and sell ETF shares); 9/30/2010 CFTC "Request for Comment on Options for a Proposed Exemptive Order Relating to the Trading and Clearing of Precious Metal Commodity-Based ETFs; Concept Release," 75 FR 189, at 60412.

[109] See "Excessive Speculation and Compliance with the Dodd-Frank Act," Permanent Subcommittee on Investigations, S. Hrg. 112-313 (11/3/2011), at 176-178.

[110] See, e.g., 9/30/2010 CFTC "Request for Comment on Options for a Proposed Exemptive Order Relating to the Trading and Clearing of Precious Metal Commodity-Based ETFs; Concept Release," 75 FR 189, at 60412.

Commodity Price Rise. Still another factor motivating bank involvement with commodities was that, beginning in 2000, commodity prices began a sharp and sustained increase, which continued to accelerate for years.[111] According to the World Bank, between 2003 and 2008, "[a]verage commodity prices doubled in U.S. dollar terms (in part boosted by dollar depreciation), making this boom longer and stronger than any boom in the 20th century."[112] While some have attributed that price rise to market forces of supply and demand, others have attributed a portion of it to increased commodity speculation fueled by banks and securities firms trading in U.S. commodities markets. In addition, commodity price volatility increased over the same period,[113] inviting commodity speculators like the banks to profit from the price changes.[114]

Federal Reserve Expansion. As banks continued to trade financial instruments linked to commodities, they also continued to lobby the Federal Reserve to loosen its restrictions on bank holding companies, in particular with respect to physical commodities. In 2003, the Federal Reserve amended Regulation Y to give bank holding companies more leeway in physically settled transactions. The amended rule allowed the holding companies to participate in commodity trades which required them to take or make delivery of documents giving title to physical commodities on an "instantaneous pass-through basis," so long as the underlying assets were approved by the CFTC for trading on an exchange.[115] The Federal Reserve also eliminated a requirement that holding companies enter into only those commodity contracts that explicitly permitted financial settlements or terminations. At the same time, like the OCC, the Federal Reserve continued to discourage holding companies from actually taking possession of the physical commodities involved in the trades.[116]

In addition, beginning in 2003, in response to individual applications, the Federal Reserve issued a series of orders granting major financial holding companies permission under the Gramm-Leach-Bliley Act to deal in a much wider array of physical commodity activities. In those orders, the Federal Reserve determined that the activities requested by the financial holding companies were "complementary" to their trading in commodity derivatives.[117]

The earliest order explicitly allowed financial holding companies to buy and sell oil, natural gas, agricultural products, and other commodities in the physical spot market, and to take and make delivery of physical commodities to settle commodity-linked derivative

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[111] See The Merchants of Wall Street, at 300.
[112] World Bank, Global Economic Prospects 2009: Commodities at the Crossroads, http://siteresources.worldbank.org/INTGEP2009/Resources/10363_WebPDFw47.pdf.
[113] See "Speculators and Commodity Prices - Redux", CFTC Commissioner Bart Chilton (February 24, 2012), http://www.cftc.gov/PressRoom/SpeechesTestimony/chiltonstatement022412; see also "Global Commodity Markets – Price Volatility and Financialisation", Alexandra Dwyer, George Gardner and Thomas Williams (June. 2011), http://www.rba.gov.au/publications/bulletin/2011/jun/pdf/bu-0611-7.pdf.
[114] See "Derivatives, Innovation in the Era of Financial Deregulation," Wallace Turbeville (June, 2013), at 18.
[115] 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B).
[116] Id. The amended Regulation Y explicitly required holding companies to make "every reasonable effort to avoid taking or making delivery of the asset underlying the contract." Alternatively, it allowed financial companies to participate in instantaneous title transfers to the underlying assets only "by operation of contract and without taking or making physical delivery of the asset." 12 C.F.R. §225.28(b)(8)(ii)(B)(3) and (4).
[117] For more information on the individual orders, see below.

transactions.[118] A later order allowed a financial holding company to contract with a third party to "refine, blend, or otherwise alter" its physical commodities, essentially authorizing it to sell crude oil to an oil refinery and buy back the refined oil products.[119] The order also allowed the financial holding company to enter into long-term electricity supply contracts with large industrial and commercial customers, and to enter into "tolling agreements" and "energy management" agreements with power generators.[120] Together, these orders explicitly permitted banks, through their financial holding companies, to engage in a broader set of physical commodity activities than ever before in U.S. banking history.

To minimize the accompanying risks, the orders also required the relevant financial holding company to make a number of commitments to limit the size and scope of its physical commodities activities. For example, each financial holding company had to commit that the market value of its commodities holdings resulting from trading activities would not exceed 5% of its consolidated Tier I capital, and that the company would alert the Federal Reserve if and when the market value exceeded 4%.[121] Despite those and other commitments, the financial holding companies given complementary authority were able to use that authority to dramatically increase their physical commodity operations over time.

Financial Crisis Expansion. In 2008, as the financial crisis deepened in the United States and several large U.S. financial institutions declared bankruptcy or teetered on the edge of insolvency, U.S. bank acquisitions of weaker financial institutions as well as the sudden conversion of investment banks into bank holding companies led to even greater U.S. bank involvement with physical commodities.

In March 2008, for example, essentially at the request of the Federal Reserve, JPMorgan acquired The Bear Stearns Companies Inc. (Bear Stearns), a large investment bank that was then nearly insolvent.[122] At the time, Bear Stearns had extensive physical commodity holdings, including commodities that it traded in the spot markets, oil refineries, and power plants.[123] Through its acquisition of Bear Stearns, JPMorgan gained control of all of those physical commodity activities.

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[118] 2003 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Citigroup. Inc., 89 Fed. Res. Bull., at 508 (12/2003) (hereinafter "Citigroup Order"). http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.

[119] 2008 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60 (2008) (hereinafter "RBS Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf.

[120] Id. A tolling agreement typically allows the "toller" to make periodic payments to a power plant owner to cover the plant's operating costs plus a fixed profit margin in exchange for the right to all or part of the plant's power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. Id. at C64. An energy management agreement typically requires the "energy manager" to act as a financial intermediary for the power plant, substituting its own credit and liquidity for the power plant to facilitate the power plant's business activities. The energy manager also typically supplies market information and advice to support the power plant's efforts. Id. at C65.

[121] See, e.g., Citigroup Order, http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.

[122] See "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," press release issued by the Federal Reserve, http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.

[123] See, e.g., 7/2008 Federal Reserve Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co., FRB-PSI-305013 - 030 (identifying Bear Stearns assets being integrated into JPMorgan).

Six months later, in September 2008, after Lehman Brothers failed, the Federal Reserve gave immediate approval to applications from both Goldman Sachs and Morgan Stanley to become bank holding companies with access to Federal Reserve lending programs.[124] Both firms also elected to become financial holding companies authorized to engage in a broad array of financial activities. At the time of their conversions, both were heavily invested in a wide array of physical commodities and related businesses.[125]

Four months after that, in January 2009, again in response to the turmoil created by the financial crisis, Bank of America acquired Merrill Lynch, a troubled investment bank with $650 billion in assets.[126] The acquisition gave Bank of America control over Merrill Lynch's extensive commodity holdings, which the bank estimated at "roughly ten times the size" of its own commodity operations.[127] The new assets included Merrill Lynch's substantial holdings in North American physical natural gas and electrical power markets.[128]

In 2010, Goldman and JPMorgan participated in additional acquisitions that further deepened their involvement with physical commodities. In February 2010, Goldman acquired Metro International, a company with a worldwide network of commodity storage warehouses.[129] Later that year, in two separate transactions, JPMorgan acquired the Royal Bank of Scotland's 51% ownership stake in RBS Sempra, a joint venture with extensive North American and European energy and commodity operations involving oil, natural gas, metals, and power plants.[130] As part of that acquisition, JPMorgan also took ownership of Henry Bath Inc. which, like Metro International, owned a worldwide network of commodity storage warehouses.[131]

From 2009 to 2011, Goldman and JPMorgan extended their reach again, acquiring ownership stakes in the London Metals Exchange (LME), the leading futures market in metals.

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[124] See Order Approving Formation of Bank Holding Companies, 94 Fed. Res. Bull. C101, C102 (2008), 2008 WL 7861871, at *4 (order approving Goldman Sachs Group's request to become a BHC upon conversion of Goldman Bank to a state chartered bank); Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain Nonbanking Activities, 94 Fed. Res. Bull. C103, C105 (2008), 2008 WL 7861872, at *5 (Fed. Reserve Bd., Sept. 21, 2008) (order approving Morgan Stanley's request to become a BHC upon conversion of Morgan Stanley Bank to a bank).

[125] See histories of Goldman Sachs and Morgan Stanley, below.

[126] See 5/4/2010 letter from Bank of America legal counsel to the Federal Reserve providing notice of the bank's intent to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch, FRB-PSI-500001 - 218, at 013.

[127] Id. at 020-021.

[128] Id. at 020.

[129] See 9/12/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-GoldmanSachs-06-000001 - 021, at 017 (Exhibit C); "Goldman and JPMorgan Enter Metal Warehousing," Financial Times, by Javier Blas (3/2/2010), http://www.ft.com/cms/s/0/5025f82a-262c-11df-aff3-00144feabdc0.html#axzz2kXv0R8iX. Compare Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2010, at Exhibit 21.1 (including "Metro International Trade Services LLC" as a subsidiary of GS Power Holdings LLC), with Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2009, at Exhibit 21.1 (not listing GS Power Holdings LLC or Metro International as significant subsidiaries of Goldman Sachs).

[130] JPMorgan Chase & Co., Form 10-K for the fiscal year ending December 31, 2011, at 184, http://sec.gov/Archives/edgar/data/19617/000001961712000163/corp10k2011.htm#s50873 1DA912EFDF440782294EA306391.

[131] See 7/1/2010 JPMorgan press release, "J.P. Morgan completed commodities acquisition from RBS Sempra," https://www.jpmorgan.com/pages/detail/1277505237241.

Together, the two banks, through their financial holding companies, became the LME's largest shareholders until, in 2012, the shareholders sold the LME to a Hong Kong exchange.[132]

Bank Commodities Involvement Today. Today, a handful of large U.S. banks, directly and through their financial holding companies, are major participants in global commodity markets. In recent years, JPMorgan, Goldman Sachs, and Morgan Stanley were the three largest U.S. participants in physical commodities.[133] Bank of America, Barclays, and Citi were the next largest participants.[134] Deutsche Bank, Wells Fargo, and BNP followed them.[135]

The largest of those banks, through their financial holding companies, were among the largest commodity traders in the world and dominated the U.S. commodities futures, options and swaps markets. OCC data shows that, in 2013, of the commercial banks it tracked, four U.S. banks – JPMorgan, Bank of America, Citi, and Goldman Sachs – accounted for more than 90% of commodities derivatives trading and holdings within the U.S. commercial banking system.[136] OCC data also shows that, for all U.S. insured banks over the last five years, the total notional dollar value of their outstanding commodity contracts, including futures, exchange traded options, over-the-counter options, forwards, and swaps, has centered around $1 trillion:

NOTIONAL VALUE OF COMMODITY CONTRACTS[137]

	2009	2010	2011	2012	2013
Notional value of commodity contracts	$979 billion	$1.195 trillion	$1.501 trillion	$1.402 trillion	$1.241 trillion

Source: OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, Graph 3

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[132] See, e.g., 6/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMC-11-000001 - 002, at 001; 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 003, 004; "HKEx and LME announce completion of transaction," prepared by Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Limited (12/6/2012), http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/.

[133] Subcommittee briefing by the Federal Reserve (12/13/2013). Royal Bank of Scotland, which sold its major commodity holdings to JPMorgan, is no longer active in physical commodity activities in the United States. Id.

[134] Id.

[135] Id. According to the Federal Reserve, Deutsche Bank has indicated that it is planning to exit its U.S. physical commodities activities. Id. In August 2014, Deutsche Bank sold certain commodity-related assets to Morgan Stanley. 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009. Wells Fargo acquired its physical commodity activities through its acquisition of Wachovia Bank, which had a Federal Reserve order to engage in them; Wells Fargo has indicated it plans to continue to engage in physical commodity activities to a limited extent. Subcommittee briefing by the Federal Reserve (12/13/2013). According to the Federal Reserve, Royal Bank of Scotland, which sold its major commodity holdings to JPMorgan in 2010, is no longer conducting physical commodity activities in the United States. In contrast, BNP engages in physical commodity activities to a limited extent in the United States. Id. Fortis, which had a Federal Reserve order allowing it to engage in physical commodity activities, was acquired by ABN Amro Bank which, according to the Federal Reserve, no longer operates in the United States. Id. UBS and Societe General, each of which had a Federal Reserve order to engage in physical commodities, no longer engage in those activities, again according to the Federal Reserve. Id.

[136] See OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, at 1, Graph 4 and 5A, Tables 1, 2, 9 and 10, http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf.

[137] Data is taken from OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013, at Graph 3, http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf.

The data indicates that the dollar value of the banks' commodity contracts peaked in 2011 at $1.5 trillion, and while it has since declined, the value still exceeds $1.2 trillion.

The physical commodity activities of the four key banks and their financial holding companies comprise a relatively small percentage of their total commodities activities, which remain dominated by financial instruments traded on exchanges or over the counter. Public data depicting the actual size and value of their physical commodities holdings is, however, limited. One of the few sources of public data is the FR Y-9C report, a quarterly report which bank holding companies with consolidated assets of $500 million or more are required to file with the Federal Reserve, providing specified financial information. One of the required information items is the gross market value of any physical commodities held by the bank holding company in its trading inventory.[138]

The data provided on the FR Y-9C report offers a limited but useful measure of bank holding company involvement with physical commodities. As one analyst explained:

> "The gross market value of FHCs' physical commodity trading inventory … measures solely their current exposure to commodity price risk. It does not provide a full picture of these organizations' actual involvement in the business of producing, extracting, processing, transporting, or storing physical commodities."[139]

Despite this limitation, the FR Y-9C reports filed by the holding companies featured in this Report indicate that, in each of the last five years, the physical commodity holdings in their trading inventories had a total dollar value of $3 to $26 billion:

GROSS FAIR VALUE OF PHYSICAL COMMODITY TRADING INVENTORIES

	2009	2010	2011	2012	2013
Goldman Sachs	$3.7 billion	$13.1 billion	$5.8 billion	$11.7 billion	$4.6 billion
JPMorgan	$10.0 billion	$21.0 billion	$26.0 billion	$16.2 billion	$10.2 billion
Morgan Stanley	$5.3 billion	$6.8 billion	$9.7 billion	$7.3 billion	$3.3 billion

Source: Consolidated Financial Statements for Bank Holding Companies, FR Y-9C Reports, Schedule HC-D, Item M.9.a.(2).[140]

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[138] See "Consolidated Financial Statements for Bank Holding Companies – FR Y-9C," Schedule HC-D ("Trading Assets and Liabilities"), Item M.9.a.(2) ("the "Gross Fair Value of Physical Commodities held in Inventory") for each bank. Publicly traded companies provide the same information in their quarterly 10-Q filings with the SEC.

[139] The Merchants of Wall Street, at 30 [citations omitted].

[140] See National Information Center website –
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20091231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20101231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20121231.PDF, at 24;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20131231.PDF, at 25;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20091231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20101231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20121231.PDF, at 24;

This FR Y-9C data also shows that the value of the physical commodity trading inventories at the three institutions has fluctuated from year to year, and that their trading inventories comprised only a small part of the financial holding companies' overall commodity activities. That the data provides only a partial picture can be seen by comparing the reported figures against estimated values used by the Federal Reserve during its special review of bank involvement with physical commodities. In 2011, for example, a Federal Reserve examination team estimated that the physical commodity activities at Goldman Sachs had a total value of $26 billion, a total four times greater than the $5.8 billion reported by the company on the FR Y-9C report for 2011.[141]

Whether the individual financial holding companies' physical commodities activities are valued at billions or tens of billions of dollars, the bottom line is that they are substantial. They include involvement with metals warehouses, oil storage facilities, oil tankers, oil and gas pipelines, natural gas facilities, electrical power plants, gold and coal mines, and uranium. Bank holding companies are supplying crude oil to refineries, jet fuel to airlines, natural gas to manufacturers, coal to power plants, and electricity to regional power authorities.

The evidence indicates that this substantial level of bank involvement with physical commodities is a relatively recent phenomenon that has grown significantly in only the last ten years. The posture of the financial holding companies stands in sharp contrast to the longstanding U.S. principle against mixing banking with commerce. The current level of bank involvement with critical raw materials, power generation, and the food supply appears to be unprecedented in U.S. history.

In the last year, some financial holding companies have taken steps to reduce their involvement with physical commodities. In 2013, JPMorgan, Morgan Stanley, and Deutsche Bank announced plans to sell the bulk of their physical commodities businesses; in 2014, all three sold major holdings.[142] Those actions may have been in response to declining profits in the commodities field, as well as Federal Reserve pressure to reduce some activities. In contrast, although Goldman Sachs announced plans to sell a certain portion of its physical commodity activities, it also informed the Federal Reserve that it planned to continue to pursue physical

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http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20131231.PDF, at 25;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20091231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20101231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20111231.PDF, at 23;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20121231.PDF, at 24;
http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2162966_20131231.PDF, at 25.

[141] 2011 Work Plan, at FRB-PSI-200455 - 476, at 465.

[142] See, e.g., 9/9/2014 Morgan Stanley press release, "Morgan Stanley to Sell TransMontaigne Ownership Stake to NGL Energy Partners," http://www.morganstanley.com/about/press/articles/fc833211-9eeb-4616-87ff-3024b89db7b1.html; 3/19/2014 Mercuria press release, "Mercuria Announces Acquisition of J.P. Morgan Physical Commodities Business," http://www.mercuria.com/media-room/business-news/mercuria-announces-acquisition-jp-morgan-physical-commodities-business; 12/5/2013 Deutsche Bank press release, "Deutsche Bank refocuses its commodities business," https://www.db.com/ir/en/content/ir_releases_2013_4413.htm.

commodities as a core business line.[143] In addition, other banks, such as Bank of America, have pending requests to increase their physical commodity activities.[144]

B. Risks Associated with Bank Involvement in Physical Commodities

Increased U.S. bank involvement with physical commodities has evolved despite a longstanding U.S. principle discouraging national banks from operating commercial enterprises. Multiple concerns have been articulated over the years in support of separating banking from commerce. In the case of physical commodities, at least seven different concerns have been identified when banks own or control substantial physical commodities and related businesses: (1) it provides banks with unfair economic and informational advantages; (2) it distorts credit decisionmaking; (3) it creates conflicts of interest between banks and their clients; (4) it invites market manipulation and excessive commodity speculation; (5) it creates inappropriate bank and systemic risks; (6) it creates undue concentrations of economic power; and (7) it intensifies the too-big-to-fail problem by creating financial conglomerates that are too big to manage or regulate.

Unfair Economic Advantages. One key concern with mixing banking and commerce is that it may provide banks, through their financial holding companies and subsidiaries, with unfair economic or informational advantages compared to other commercial competitors.

Most banks have access to low cost financing through either the Federal Reserve's lending programs or interbank loans bearing low interest rates. National banks have federally insured deposits, and some are also perceived as too big to fail, factors that generally lower their lending costs. Nonbank businesses typically do not have the same access to low cost financing, giving banks a competitive advantage when they operate commercial enterprises.

One expert described the problem this way:

> "The growth of big banks is a case of too much of a good thing metastasizing into a bad thing. What started out with a limited safety net designed to protect the payments system and to provide a safe place for small, unsophisticated depositors to place their savings has morphed into an anticompetitive system where government subsidized banks can use unfair advantage to enter and dominate any market or business, financial or nonfinancial, that they choose."[145]

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[143] Subcommittee briefing by the Federal Reserve (12/13/2013). See also, e.g., "Goldman Sachs Stands Firm as Banks Exit Commodity Trading," Bloomberg, Ambereen Choudhury (4/23/2014). http://www.bloomberg.com/news/2014-04-22/goldman-sachs-stands-firm-as-banks-exit-commodity-trading.html.

[144] See 5/4/2010 letter from Bank of America legal counsel to Federal Reserve, FRB-PSI-500001 - 218 (requesting complementary authority to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch). In addition, in 2012, Toronto Dominion Bank requested complementary authority to engage in certain physical commodity activities involving natural gas, but has since withdrawn that request. 10/2/2012 letter from Toronto Dominion Bank legal counsel to Federal Reserve, FRB-PSI-500219 - 231; 11/17/2014 email from the Federal Reserve to the Subcommittee, PSI-FRB-21-000001 - 002, at 002. Despite the passage of four years, the Bank of America request remains pending at the Federal Reserve.

[145] Rosner Testimony, at 15.

In a 2013 editorial opposing bank involvement in commodity speculation, a business publication wrote:

> "The largest U.S. banks are accused of causing problems in markets ranging from energy to aluminum. ... Why are the banks in these businesses in the first place?
>
> Part of the answer is that they're among the country's most subsidized enterprises. The Federal Deposit Insurance Corp. and the Federal Reserve, both backed by taxpayers, provide an explicit subsidy by ensuring that banks can borrow money in times of market turmoil. Banks that are big and connected enough to bring down the economy enjoy an added implicit subsidy: Creditors will lend to them at low rates on the assumption that the government won't let them fail. ...
>
> Congress could ... strictly limit all federally insured banks to the business of taking deposits, lending, and processing payments."[146]

Unfair Informational Advantages. In addition to low cost financing, major banks that, through subsidiaries or financial holding company affiliates, own pipelines, warehouses, shipping operations, or refineries are likely to acquire commercially useful, non-public information that could benefit their trading activities and perhaps lead to unfair trading advantages.

Useful non-public information could come from the bank's own operations or from observing or assisting actions taken by clients, and include a wide variety of types of data, including information about commodity price trends, upcoming large transactions, supply disruptions, transport flows, or regulatory actions. That physical commodity activities can provide access to commercially valuable non-public information has long been recognized by both market participants and regulators. In a 2005 application seeking authority to engage in physical commodity activities, for example, JPMorgan stated that the activities would:

> "position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings."[147]

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[146] "The Wrong Business for Big Banks," Bloomberg Businessweek (8/1/2013), http://www.businessweek.com/articles/2013-08-01/bloomberg-view-the-wrong-business-for-big-banks.

[147] 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89," PSI-FederalReserve-01-000004, at 016. See also 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," PSI-FederalReserve-02-000012 - 059, at 019 - 020, 032 ("The Complementary Activities will further complement the Existing Business by providing JPMVEC [JPMorgan's subsidiary] with important market information. The ability to be involved in the supply end of the commodities markets through tolling agreements provides access to information regarding the full array of actual producer and end-user activity in those markets.").

A Federal Reserve analysis of the physical commodity activities conducted by Morgan Stanley and Goldman Sachs also noted the informational advantage those activities produced:

> "In addition to the financial return, these direct investments provide MS [Morgan Stanley] and GS [Goldman Sachs] with important asymmetrical information on conditions in the physical markets such as production and supply/demand information, etc., which a market participant without physical global infrastructure would not necessarily be privy to."[148]

Since U.S. commodities laws do not currently prohibit using non-public information in commodities trading in the same way that U.S. securities laws restrict the use of non-public information in securities transactions, banks can legally obtain and use nonpublic information to trade in the commodity futures, swaps, and options markets. For example, a bank whose affiliate has a controlling interest in a refinery could quickly learn of a pending shutdown due to technical problems and use that inside information to profit from a short position in the commodity markets. A bank with an affiliate that controls a shipping operation could find out when bad weather has delayed deliveries and, again, use that information legally to profit in the commodities markets from shorting prices. Concerns about unfair trading advantages deepen when the commodities trader is a large financial institution drawing on client data and its own commodity activities to profit from counterparties.

Those types of unfair informational advantages would not apply to banks whose affiliates do not own or control physical commodities or related businesses.

Credit Distortions. A second problem with mixing banking and commerce is the concern that it may distort bank decisions about extending credit to businesses.

The concern is that, if a bank's affiliate owns or controls a business that handles physical commodities, the bank may not only extend credit to that business on favorable terms, but also deny credit to its competitors. A bank that owns or profits from a solar power plant, for example, may view any request for financing made by that firm in a favorable light. In contrast, the bank may be reluctant to provide financing to a rival solar power generator or may agree to lend funds only on more expensive terms. Because of its commercial involvement, the bank's credit decisions may no longer utilize objective lending criteria, but may be distorted by the bank's desire to see a particular business succeed.

One expert has warned that distorted credit decisions create a number of risks:

> "A bank may extend credit to a company in which it has an ownership interest, independent of the company's creditworthiness, to assist the company and increase the value of its stock. Such an extension would conflict with the interest of its depositors, its safety and soundness, and the integrity of the deposit insurance fund. Further, rival

[148] Undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 - 454, at 439 [sealed exhibit].

> companies, unaffiliated with the banking organization, might be subject to unfair credit terms."[149]

A related concern is that distorted credit determinations will not be limited to the enterprises owned or controlled by the bank's affiliates, but may extend to other businesses as well. In one scenario, if a bank has an ownership interest in a particular commodity-related business, it may seek to guide related business opportunities to other clients in which the bank has invested or provided financing. For example, if the bank's solar power plant needed manufacturing equipment, the bank might recommend a manufacturer that has an outstanding loan with the bank.

The Supreme Court recognized similar problems in a 1971 decision which overturned an OCC interpretive letter allowing bank subsidiaries to form and sell shares in mutual funds. The Court identified a litany of "hazards" that could unfold from that business, including credit problems:

> "[S]ince public confidence is essential to the solvency of a bank, there might exist a natural temptation [by the bank] to shore up the affiliate through unsound loans or other aid. Moreover, the pressure to sell a particular investment and to make the affiliate successful might create a risk that the bank would make its credit facilities more freely available to those companies in whose stock or securities the affiliate has invested or become otherwise involved. ... The bank might exploit its confidential relationship with its commercial and industrial creditors for the benefit of the [mutual] fund. ... The bank might make loans to facilitate the purchase of interests in the fund."[150]

The Supreme Court summarized this set of concerns by warning that a bank's ownership interest in its affiliate "might impair its ability to function as an impartial source of credit."[151]

Conflicts of Interest. A third problem with mixing banking and commerce is that it invites conflicts of interest between a bank and its clients. In the case of physical commodities, those conflicts can arise in multiple settings. If the bank's affiliate owns a solar power plant, for example, it may put that plant's financing interests before those of a client with a rival power plant. If the bank's affiliate owns a metals warehouse and the bank trades metals in the futures market, the bank may time the release of the warehoused metal in ways that benefit the bank's own commodities positions and contrary to the interests of its clients. If a bank's affiliate supplies crude oil to a refinery while the bank trades oil futures, the bank may delay its oil deliveries to restrict the supply and boost oil prices in the futures market, increasing the value of its long positions while decreasing the value of the short positions held by its counterparties.

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[149] Shull, at 40. See also id. at 58 ("Will [small and new businesses] have less access to credit than rivals who are affiliated with banks, and, when they obtain credit, will their rates be higher? ... Will higher rates compel most businesses to affiliate with banks if they can?"); Rosner Testimony at 12 (describing a "risk that a bank may choose to deny lending or underwriting to a competitor of their commercial affiliate ... [or] may choose to lend, at preferential rates, to a commercial affiliate ... [or] may, legally or illegally, tie loans to the purchase of a commercial affiliate's products").

[150] Investment Company Institute v. Camp, 401 U.S. 617, 631-632 (1971).

[151] Id. at 631.

Possible conflicts of interest permeate virtually every type of commodity activity. If the bank's affiliate leases an electrical power plant, the bank may attempt to use regional pricing conventions to boost its profits, even at the expense of clients that pay the higher electricity costs. If the bank's affiliate mines coal while the bank trades coal swaps, the bank may ask its affiliate to store the coal rather than sell it to help restrict supplies, and benefit from long swap positions, while causing its counterparties to incur losses. If the bank's affiliate operates a commodity-based exchange traded fund backed by gold, the bank may ask the affiliate to release some of the gold into the marketplace and lower gold prices, so that the bank can profit from a short position in gold futures or swaps, even if some clients hold long positions.

Market Manipulation. A fourth problem with mixing banking and commerce is that, in the context of physical commodities, it invites market manipulation and excessive speculation in commodity prices. If a bank's affiliate owns or controls a metals warehouse, oil pipeline, a coal shipping operation, refinery, grain elevator, or exchange traded fund backed by physical commodities, the bank has the means to affect the marginal supply of a commodity and can use those means to benefit the bank's physical or financial commodities trading positions. If a bank's affiliate controls a power plant, the bank can "manipulate the availability of energy for advantage" or to obtain higher profits.[152]

In recent years, banks and their holding companies have settled allegations of price manipulation by paying substantial fines and legal fees. In July 2013, for example, JPMorgan paid $410 million to settle FERC charges that it used multiple pricing schemes to manipulate the price of electricity produced by power plants it controlled in California and Michigan, in a matter explained in more detail below.[153] That same month, FERC charged Barclays Bank with manipulating electricity prices in California from 2006 to 2008, in order to benefit its swap positions in other markets, directing it to disgorge $35 million plus interest and pay a penalty totaling $435 million.[154] Specifically, FERC alleged that Barclays and its traders "engaged in a coordinated scheme to manipulate trading at four electricity trading points in the Western United States ... by engaging in loss-generating trading of next-day fixed-price physical electricity on the IntercontinentalExchange ... to benefit Barclays' financial swap positions in those markets."[155] Barclays is contesting both the charges and penalty.

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[152] Rosner Testimony, at 12.

[153] See "FERC, JP Morgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers." FERC News Release (7/30/2013).

[154] FERC v. Barclays Bank PLC, Docket No. IN08-8-000, Order Assessing Civil Penalties, 144 FERC ¶ 61,041 (7/16/2013). The CFTC has also charged hedge funds with market manipulation, demonstrating that financial firms have the means to manipulate commodity futures and swap prices. See, e.g., CFTC v. Amaranth Advisors, LLC, Case No. 07-CV-6682 (DC) (S.D.N.Y.)(7/25/2007); "Amaranth Entities Ordered to Pay a $7.5 Million Civil Fine in CFTC Action Alleging Attempted Manipulation of Natural Gas Futures Prices." CFTC Press Release No. 5692-09 (8/12/2013)(describing how, in 2009, the CFTC collected $7.5 million in fines from a hedge fund, Amaranth Advisors LLC, and its Canadian subsidiary, for attempted manipulation of natural gas futures prices in 2006); CFTC v. Moncada, Case No. 09-CV-8791 (S.D.N.Y.)(12/4/2012)(describing how, in 2012, the CFTC charged two related hedge funds, BES Capital LLC and Serdika LLC, with attempted manipulation of wheat futures prices in 2009; they are contesting the charges).

[155] FERC v. Barclays Bank PLC, Docket No. IN08-8-000, Order To Show Cause and Notice of Proposed Penalty, 141 FERC ¶ 61,084 (10/31/2012). For more information, see discussion of JPMorgan's involvement with electricity, below.

In another case the prior year, in January 2013, Deutsche Bank settled FERC charges that it, too, had manipulated electricity prices.[156] FERC alleged that Deutsche Bank had "engag[ed] in a scheme in which [it] entered into physical transactions to benefit its financial position," identifying occasions in 2010 in which the bank made physical electricity trades to offset losses in electricity-related financial instruments held by the bank.[157] Deutsche Bank admitted the facts, but neither admitted or denied the violations of law, while paying disgorged profits and a civil penalty totaling over $1.6 million. In still another case, involving agricultural commodities rather than electricity, the CFTC reached a settlement, in 2014, with FirstRand Bank, Ltd. of South Africa on charges of "executing unlawful prearranged, noncompetitive trades involving corn and soybean futures contracts on the Chicago Board of Trade (CBOT)."[158] The CFTC found:

> "[O]n several occasions, from June 2009 to August 2011, FirstRand and another foreign-based company entered into prearranged noncompetitive trades involving CBOT corn and soybean futures contracts. Before these trades were entered on the CBOT, employees for FirstRand and the other company had telephonic conferences with each other during which they agreed upon the contract, quantity, price, direction, and timing of those trades. These prearranged trades negated market risk and price competition and constituted fictitious sales, in violation of the [Commodities Exchange Act]."[159]

To settle the charges, FirstRand agreed, without admitting or denying the facts or violations of law, to pay a $150,000 civil penalty and revamp its procedures to prevent future fictitious trades.[160]

These cases are consistent with prior investigations by this Subcommittee which included evidence of bank participation in commodity trading strategies that, collectively, constituted excessive speculation in such energy and agricultural commodities as crude oil, natural gas, and wheat.[161] Banks suspected of engaging in manipulation or excessive speculation in commodity markets risk civil and criminal investigations, legal expenses, reputational damage, and penalties.

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[156] See In re Deutsche Bank Energy Trading, LLC, FERC Case No. IN12-4-000, "Order Approving Stipulation and Consent Agreement," (1/22/2013), 142 FERC ¶ 61,056. http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf.

[157] 1/22/2013 FERC press release, "FERC Approves Market Manipulation Settlement with Deutsche Bank," http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp.

[158] 8/27/2014 CFTC press release, "CFTC Orders FirstRand Bank, Ltd. to Pay $150,000 Civil Monetary Penalty for Unlawfully Executing Prearranged, Noncompetitive Trades on the CBOT," http://www.cftc.gov/PressRoom/PressReleases/pr6985-14.

[159] Id.

[160] See In re FirstRand Bank, Ltd., CFTC Case No. 14-23 (CFTC Administrative Proceedings), "Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions," at 1, http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enffirstrandorder082714.pdf.

[161] See, e.g., "The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat," report by Permanent Subcommittee on Investigations, S. Prt. 109-65 (6/27/2006); "Excessive Speculation in the Wheat Market," hearing before Permanent Subcommittee on Investigations, S. Hrg. 111-155 (7/21/2009).

Increased Bank and Systemic Risks. A fifth problem with mixing banking and commerce in the context of physical commodities is that it imposes a wide range of new and increased risks on both individual banks and the broader U.S. financial system and economy.

Banks that own or control businesses with physical commodities, either directly or through their financial holding companies, incur risks that are common in those businesses, but uncommon in banking. For example, if the BP oil rig that caused a major oil spill in the Gulf of Mexico had instead been owned, leased, or controlled by a bank, that bank would have confronted multi-billion-dollar liabilities that otherwise would never have threatened its balance sheet. Similar low-probability but high-risk operational risks affect a wide range of commodities, including coal, natural gas, and uranium, as well as a wide range of commodity activities, such as mining, transporting, storing, or refining commodities with toxic properties. Another set of risks include the expenses and disruptions that may be caused by the sudden destruction of a major asset such as a power plant, warehouse, or pipeline; major thefts of physical inventory; or industrial accidents that injure individuals or property. Still another type of unusual risk is undergoing investigation for possible manipulation of physical commodity prices, with the attendant legal expenses, reputational damage, and, in some cases, large fines. Each of those risks does not normally apply to a bank, and would not apply if the bank's affiliates did not handle physical commodities.

In addition to the risks imposed on individual banks, physical commodities create systemic risks. Currently, substantial physical commodity activities have been undertaken by a handful of the country's largest banks, each of which qualifies as a systemically important financial institution. If one of those banks were to suffer an environmental or operational disaster involving its physical commodities or sudden massive commodity trading losses, the resulting financial consequences might be difficult to confine to that one bank. For example, if the bank were to lose market confidence, it might find itself unable to obtain short term financing, derivatives counterparties, or business partners, or might have to accept higher expenses to continue to operate. Deposit runs or restricted liquidity could worsen the situation. If the bank held substantial interests in non-banking commercial enterprises, its troubles could taint those nonbanking enterprises as well. Regulatory action, and ultimately a U.S. taxpayer bailout, might be required to prevent contagion spreading from one major bank to other financial institutions or other sectors of the U.S. economy.

One business publication framed the problem this way in an editorial opposing bank involvement in physical commodity businesses:

> "Subsidized financing – made particularly cheap by the Fed's efforts to stimulate the economy with near-zero interest rates – [have] encouraged banks and their clients to build bigger stockpiles [of commodities] than they otherwise would have, tying up supplies. If the bets were to go wrong and lead to distress at a big bank, the Fed would have to provide emergency financing for an activity that taxpayers never intended to support."[162]

[162] "The Wrong Business for Big Banks," Bloomberg Businessweek (8/1/2013), http://www.businessweek.com/articles/2013-08-01/bloomberg-view-the-wrong-business-for-big-banks.

A related risk, identified by another expert, is that banks, for legal or reputational reasons, may take on the debts of affiliated commercial companies, creating unanticipated risks not only to the bank itself, but also possibly systemic risks:

> "Unfortunately, reputational risk within a systemically important financial institution can result in requirements that the firm backstop assets, even those that were legally isolated. In 2008 Citi was obligated to guarantee and then repurchase $17.4 billion of structured investment vehicles (SIVs). As a result, the failure of the federal government to backstop a firm's reputation against such losses during a time of crisis could exacerbate panics and lead to contagion and the creation of larger systemic problems."[163]

A second set of systemic risks involves the physical commodities themselves. Banks whose affiliates horde key industrial metals such as copper, aluminum, or uranium in a warehouse or an ETF could impose higher costs or a scarcity of raw materials on manufacturers, technology companies, the automobile sector, nuclear power plants, or other industries. Banks that manipulate electricity prices could impose higher costs on whole regions of the country. Banks that supply jet fuel to airlines, coal to power plants, or natural gas to manufacturers could, if they faltered, affect industries far afield from the banking sector. Ultimately, they could negatively impact the U.S. economy.

Undue Concentrations of Economic Power. A sixth problem with mixing banking and commerce in the context of physical commodities involves undue concentrations of economic power.[164]

Banks already occupy a critical role in the U.S. economy, as custodians of the country's wealth, facilitators of funding transfers worldwide, and arbiters of credit. Well aware of their special status, banks have used their access to inexpensive financing and excess deposits to expand into multiple business sectors. According to Federal Reserve data, at the end of 2011, the top five U.S. banks alone held assets equal to 56% of the U.S. economy.[165]

Enabling major banks to straddle, not only the financial sector, but also key raw material and energy markets, would further extend their economic power. Industrial metals such as copper and aluminum are essential in countless U.S. industries, including computers, automobiles, and manufacturing equipment. Uranium is a critical contributor to nuclear power plants, as well as certain defense and medical industries. Low cost natural gas is rejuvenating U.S. manufacturing, as well as heating homes and producing low cost electricity. Economical electricity generation is fundamental to the entire country, as is reasonably priced crude oil. Refined oil products such as diesel fuel, heating oil, and jet fuel play critical roles in the U.S.

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[163] Rosner Testimony, at 7-8.

[164] A 2012 study by the Federal Reserve Bank of New York noted that separating banking from commerce was, in part, "intended to prevent self-dealing and monopoly power" by bank holding companies. "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (July 2012), at 3, http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf .

[165] See "Big Banks: Now Even Too Bigger to Fail," Bloomberg Businessweek, David J. Lynch (4/19/2012), http://www.businessweek.com/articles/2012-04-19/big-banks-now-even-too-bigger-to-fail (stating: "Five banks – JPMorgan Chase (JPM), Bank of America (BAC), Citigroup (C), Wells Fargo (WFC), and Goldman Sachs (GS) – held more than $8.5 trillion in assets at the end of 2011, equal to 56 percent of the U.S. economy, according to the Federal Reserve. That's up from 43 percent five years earlier").

economy. Agricultural products, including wheat, corn, and soybeans, not only help feed the world, but produce biofuels that reduce U.S. dependence on foreign oil. If banks were to dominate, not only the financial sector, but also key energy, metals, and agricultural sectors, they would have even more influence over the economy.

One expert observed that if major banks:

> "are allowed to control vast networks of nonfinancial assets, either as principal or agent, they will have the power to pick winners and losers in the commercial world, not based on the productivity or competitive advantages of those firms' operations but as a result of their own profit motives."[166]

The same expert quoted a warning by the Independent Community Bankers Association:

> "Over time, the individual, the small business owner, small towns, and rural countryside will suffer economically. More power will devolve to fewer and fewer hands, and economic diversity will wither, and with it, choices."[167]

In the first decade of the twentieth century, a handful of U.S. banks dominated major U.S. industries, including railroads, oil, mining, and the nascent electrical industry. The Pujo or money trust hearings concluded that those banks had abused the public trust.[168]

Too Big to Manage or Regulate. A final problem with mixing banking and commerce in the context of physical commodities is that it intensifies the problem of too-big-to-fail banks by producing complex financial conglomerates that are too big to manage or regulate. Businesses that conduct commodities-related activities involving the producing, storing, transporting, and refining of commodities are, in themselves, complex enterprises with multiple regulatory and practical difficulties. Adding those complexities to the complexities already attendant to global banks conducting hundreds of billions of dollars of complicated financial transactions around the world raises regulatory and management problems it would be foolhardy to ignore or discount.

C. Role of Regulators

Increased bank involvement with physical commodities could not have taken place in the United States without the acquiescence of federal bank regulators that set the parameters on permissible bank activities. Because most bank involvement with physical commodities takes place through the bank's financial holding company, actions by the Federal Reserve, the exclusive regulator of bank holding companies, take center stage. Because a few banks also participate directly in physical commodity activities, actions taken by the OCC, the primary regulator of national banks, also come into play. In addition, other federal agencies exercise oversight of certain aspects of physical commodity activities, including agencies that oversee

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[166] Rosner Testimony at 13.

[167] Id., citing Cam Fine of the Independent Community Bankers Association, Chicago Fed Letter, "The Mixing of Banking and Commerce: A conference summary," Nisreen H. Darwish, Douglas D. Evanoff, Essays on Issues, The Federal Reserve Bank of Chicago, No. 244a (Nov. 2007), http://qa/chicagofed.org/digital_assets/publications/chicago_fed_letter/2007/cfInovember2007_244a.pdf.

[168] Inflated: How Money and Debt Built the American Dream, (John Wiley & Sons, 2010), at 106.

U.S. commodities markets; electricity markets and energy production; commodity-related securities; and commodity-related environmental and safety issues.

(1) Federal Reserve Board

The Federal Reserve Board of Governors has exclusive responsibility under the Bank Company Holding Act of 1956 to regulate holding companies that own or control banks, including overseeing their involvement with physical commodities.

The Federal Reserve currently oversees nearly 5,000 domestic and foreign-owned bank holding companies.[169] Less than 150 of those holding companies are major global institutions with $50 billion or more in assets. In 2011, 26 domestic bank holding companies and 106 foreign-owned bank holding companies reported $50 billion or more in total consolidated assets.[170] Together, those holding companies reported a combined global value in excess of $70 trillion.[171]

Within the Federal Reserve, the Division of Banking Supervision and Regulation (BS&R) oversees bank holding companies. Within BS&R, the Large Institution Supervision Coordinating Committee (LISCC) coordinates the efforts of the Federal Reserve System to oversee the largest and most complex bank holding companies and other systemically important financial institutions.[172] Created in response to the financial crisis of 2008, LISCC was designed to centralize supervision of those firms and to apply a cross-firm, interdisciplinary approach to identify and reduce material risks to the U.S. and global banking system.[173]

Additional supervisory duties are held by two BS&R subgroups known as the Large Banking Organizations (LBO) Section and the International Banking Organizations (IBO) Section. The LBO Section helps oversee domestic bank holding companies that have $50 billion or more in consolidated assets but are not overseen by LISCC.[174] It works with the examination and supervisory efforts of the district Reserve Banks; reviews examination and other reports on bank holding companies and state member banks; and helps develop informal and formal enforcement actions.[175] The IBO Section helps oversee foreign banking organization that have $50 billion or more in consolidated U.S. assets but are not overseen by LISCC.[176] It monitors

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[169] 5/23/2012 letter from Federal Reserve System's Office of Inspector General to the Federal Reserve's Division of Banking Supervision and Regulation (BS&R) regarding an audit of BS&R efforts to develop enhanced prudential standards under Section 165 of the Dodd-Frank Act (hereinafter "5/23/2012 Federal Reserve Inspector General Letter"), at 3, http://www.federalreserve.gov/oig/files/BOG_enhanced_prudential_standards_progress_May2012.pdf (stating that, as of March 31, 2011, the Federal Reserve oversaw 4,770 domestic and 179 foreign-owned bank holding companies).

[170] Id.

[171] Id.

[172] See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 2, http://www.federalreserve.gov/bankinforeg/srletters/sr1217.pdf.

[173] See, e.g., testimony of Federal Reserve Governor Daniel K. Tarullo before the Senate Committee on Banking, Housing and Urban Affairs, hearing on Dodd-Frank Act Implementation, (6/6/2012), http://www.federalreserve.gov/newsevents/testimony/tarullo20120606a.htm.

[174] See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 3, http://www.federalreserve.gov/bankinforeg/srletters/sr1217.pdf.

[175] 5/23/2012 Federal Reserve Inspector General Letter, at 4.

[176] See Federal Reserve SR Letter 12-17, "Consolidated Supervision Framework for Large Financial Institutions," (12/17/2013), at 3, http://www.federalreserve.gov/bankinforeg/srletters/sr1217.pdf.

foreign country developments that could affect supervision of foreign banks operating in the United States; works with foreign regulators of U.S. banks operating abroad; and provides Federal Reserve views on supervisory issues and banking trends of international interest.[177]

To oversee large bank holding companies, the Federal Reserve assigns a team of examiners to each institution. In New York, the head of the team is called the Senior Supervisory Officer (SSO); outside of New York, the team leader is generally called the Central Point of Contact (CPC).[178] Depending upon the size and complexity of the holding company, the SSO or CPC examination team has between 10 and 40 members with various areas of expertise.[179] At larger holding companies, the examination team typically spends four days per week on site at the assigned institution and one day per week at Federal Reserve offices.[180]

The examination team typically develops an annual supervisory plan and conducts routine and special examinations on a wide range of holding company issues, including capital and liquidity adequacy, management of core business lines, internal controls, stress testing, and risk management. Risk specialists may assist or conduct certain examinations. The team provides written materials summarizing examination results, identifying problems, and requiring or encouraging corrective actions. Team members also conduct ongoing meetings with the holding company to monitor developments and communicate concerns. In addition, the examination team helps prepare the Federal Reserve's annual rating assessment of the bank holding company.

According to the Federal Reserve, the BS&R division does not maintain a group of examiners who specialize in physical commodity issues, nor do SSO and CPC teams typically include physical commodities specialists.[181] Instead, SSO and CPC teams typically assign physical commodity related concerns to examiners who also handle other issues.[182]

Key Federal Reserve regulatory issues related to physical commodities include application of the Gramm-Leach-Bliley authorities for permissible financial activities, nonfinancial complementary activities, merchant banking investments, and grandfathered commodity activities, as well as enforcement of prudential limits on physical commodity activities.

(2) Other Federal Bank Regulators

While the Federal Reserve has exclusively responsibility for regulating financial holding companies, the Office of the Comptroller of the Currency (OCC) and Federal Deposit Insurance Corporation (FDIC) are charged with overseeing individual national banks and their subsidiaries. The OCC has primary regulatory authority over national banks, and is charged with, among other tasks, ensuring those banks comply with the law restricting them to the "business of banking" and operate in a safe and sound manner. The FDIC exercises secondary authority over national

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[177] Id. at 4-5.
[178] Subcommittee briefing by the Federal Reserve (12/13/2013).
[179] Id.
[180] Id.
[181] Id.
[182] Id.

banks, with its responsibilities centered around protecting the federal deposit insurance system from losses.

Over the years, the OCC has played a key role in the physical commodities area by expansively interpreting the scope of the bank powers clause of the National Bank Act to permit commodity-related activities. As explained earlier, the bank powers clause sets out the boundaries of permissible activities by national banks. It states that a national bank may exercise:

> "all such incidental powers as shall be necessary to carry on the business of banking; by discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; by receiving deposits; by buying and selling exchange, coin, and bullion; by loaning money on personal security; and by obtaining, issuing, and circulating notes ...."[183]

Both the OCC and the courts have determined that the banking powers granted by this clause should be interpreted broadly.[184] During the 1980s, when commodity issues first arose, the OCC reasoned that, since commodities were not expressly mentioned in the bank powers clause, the key issue was whether they were permissible "incidental powers." Over the years, the OCC has used several tests to make that determination. In some interpretive letters, the OCC used a judicial standard which required only that the commodity-related activity "be 'convenient and useful' in the performance of the bank's expressly permitted activities."[185] That non-demanding standard made it easy for the OCC to find that a variety of commodity-related activities were permissible.

In another letter, the OCC used a more detailed, four-part test, citing multiple court decisions as the basis for the standards:

> "(1) whether the activity is similar to the types of activities permitted by the Act and not expressly prohibited ... or is not 'so disconnected with the banking business as to make it in violation of' section 24 ...
> (2) whether the activity is a 'generally adopted method' of banks or one in which banks have traditionally engaged ...
> (3) whether the activity in question 'has grown out of the business needs of the country' ... or would 'promote the convenience of [the bank's] business for itself or for its customers" ... and
> (4) whether the activity is usual and useful to the bank, or is expected of the bank, in performing its functions in the current competitive climate."[186]

While this test is not explicitly cited in other OCC interpretive letters, its standards seem to underlie much of the OCC's analysis. For example, a number of OCC interpretive letters

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[183] 12 U.S.C. §24 (Seventh).
[184] See, e.g., NationsBank of North Carolina, N.A. v. Variable Annuity Life Co., 513 U.S. 251, 257-59, 115 S. Ct. 810 (1995); OCC Interpretive Letter No. 632 (6/30/1993), at 5.
[185] See, e.g., OCC Interpretive Letter No. 260 (6/27/1983), at 4, citing Arnold Tours, Inc. v. Camp, 472 F.2d 427 (1st Cir. 1972); OCC Interpretive Letter No. 356 (1/7/1986), at 2; OCC Interpretive Letter (6/19/1986), at 2; OCC Interpretive Letter No. 1025 (4/6/2005), at 6.
[186] OCC Interpretive Letter No. 494 (12/20/1989), at 11-12 (citations omitted).

analogized the bank's authority to execute commodity-related transactions to its longstanding authority to act as a financial intermediary, broker, or lender for its clients, and concluded that the similarity justified finding that the commodity-related activities were permissible under the bank powers clause.[187]

Beginning in the 1990s, OCC interpretive letters often used another approach which analyzed whether the commodity-related activity:

> "(1) [was] functionally equivalent to or a logical outgrowth of a traditional banking activity; (2) would respond to customer needs or otherwise benefit the bank or its customers; and (3) involve[d] risks similar to those already assumed by banks."[188]

In 1993, the OCC used that three-part test in its key interpretive letter approving national banks taking delivery of physical commodities and conducting related activities such as storing, transporting, and disposing of the commodities.[189] The OCC letter found that taking physical delivery of commodities was a logical outgrowth of a bank's other permissible activities and served as a means to manage the risks arising from those permissible activities.[190] The letter determined that the bank's clients would benefit from the bank's accepting physical commodities by providing the bank with "more accurate and economical hedges" and by increasing the bank's ability to compete in the commodities markets, both of which could lead to reduced prices for clients.[191] The letter also determined that the bank itself would benefit from using more accurate hedges that reduced risk.[192] Finally, the OCC letter found that the risks associated with taking physical delivery of commodities were similar to those in other permissible banking activities.[193] The OCC used the same three-part test in several other interpretive letters allowing banks to engage in physically-settled commodity transactions.[194]

Even after finding that taking physical delivery of commodities was within the business of banking, however, the OCC routinely placed prudential conditions on the exercise of that activity, requiring the bank to put into place risk management, documentation, and audit controls to ensure safe and sound banking practices. As part of that effort, the OCC required a bank, prior to engaging in any physically-settled commodity transactions, to submit a detailed plan to the OCC and obtain prior written authorization from its OCC supervisory staff.[195] Another letter placed limits on the volume of permissible commodities trading.[196] Still others required the implementation of a bank circular on risk management.[197]

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[187] See, e.g., id. at 16-25; OCC No-Objection Letter No. 87-5 (7/20/1987), at 4-6; OCC Interpretive Letter (3/2/1992), at 3-4; OCC Interpretive Letter No. 652 (9/13/1994), at 4; OCC Interpretive Letter No. 929 (2/11/2002), at 4-5.
[188] OCC Interpretive Letter No. 632 (6/30/1993), at 4.
[189] Id.
[190] Id. at 5.
[191] Id. at 4.
[192] Id.
[193] Id.
[194] See, e.g., OCC Interpretive Letter No. 693 (11/14/1995), at 4 (metals); OCC Interpretive Letter No. 937 (6/27/2002), at 7-10 (electricity); OCC Interpretive Letter No. 1060 (4/26/2006), at 6-7 (coal).
[195] OCC Interpretive Letter No. 632 (6/30/1993), at 6.
[196] See OCC Interpretive Letter No. 507 (5/5/1990), at 3.
[197] See, e.g., OCC Interpretive Letter No. 937 (6/27/2002), at 10-11.

Another line of OCC interpretive letters extended bank involvement with physical commodities by approving proposed merchant banking investments in energy-related businesses.[198] Still another line of OCC letters approved credit arrangements in which energy producers agreed to repay bank loans by assigning the bank a royalty interest in the producer's physical energy reserves.[199]

Through its interpretation of the bank powers clause, the OCC continually extended the scope of national bank involvement with commodities, including physical commodities. Its decisions allowed national banks and their subsidiaries to execute and clear futures, options and swaps; become members of commodity exchanges and clearinghouses; engage in physically-settled transactions involving the delivery of physical commodities; store, transport, and dispose of physical commodities; invest in commodity-related businesses; and deal with a wide range of commodities with unique and toxic properties, from oil products to natural gas, metals, uranium, agricultural products, emissions, electricity, and more. Since bank holding companies are also restricted to engaging in banking or closely related activities, the OCC's interpretations expanded their ability to engage in physical commodity activities as well.

(3) Dodd-Frank Provisions

One set of regulatory issues that is outside the scope of this Report, but may have a significant future impact, is how implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act) will affect bank involvement with physical commodities.[200]

At least five Dodd-Frank provisions have the potential to restrict or reshape bank involvement with physical commodities. Section 171 requires minimum, risk-based capital and leverage standards for federally insured banks, their holding companies, and affiliates. If bank regulators were to determine that physical commodity activities constitute high risk activities, they could impose minimum capital or leverage standards to mitigate the risk associated with conducting such activities and discourage, reshape, or reduce bank involvement.

Section 165 authorizes enhanced supervision and prudential standards for large bank holding companies with assets in excess of $50 billion. It explicitly permits more stringent rules based on a company's "capital structure, riskiness, complexity, financial activities (including the financial activities of their subsidiaries), size" or other factors.[201] If bank regulators were to determine that physical commodity activities created sufficient risk, they could impose contingent capital, credit exposure, or leverage standards, concentration limits, stress testing, or other measures to minimize risk and discourage, reshape, or reduce bank involvement with physical commodities.

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[198] See, e.g., OCC Community Development Investment Letter No. 2005-3 (7/20/2005)(construction and operation of ethanol plant); OCC Community Development Investment Letter No. 2008-1 (7/31/2008)(development of solar energy facilities); OCC Community Development Investment Letter No. 2009-6 (12/16/2009)(installation of photovoltaic systems in low-income housing); OCC Community Development Investment Letter No. 2011-2 (12/15/2011)(construction of wind turbines).

[199] See, e.g., OCC Interpretive Letter No. 1117 (5/19/2009)(volumetric production payment loans).

[200] P.L. 111-208 (7/21/2010).

[201] Section 165(a)(2)(A).

Section 619, which is part of the Merkley-Levin provisions and includes the so-called Volcker Rule, prohibits banks and their subsidiaries from engaging in proprietary trading as well as hedging or market-making activities that create client conflicts of interest or high risk exposures. Depending upon implementation of the Volcker Rule's provisions, this section could also restrict and reshape some of the physical commodity activities now undertaken by banks, their holding companies, and affiliates.

Section 111 of the law created the Financial Stability Oversight Council (FSOC) whose mission is to identify and address systemic risks to the U.S. financial system. Section 152 created the Office of Financial Research which the FSOC could task with gathering and analyzing data on possible systemic risks caused by bank involvement with physical commodities. If the FSOC were to determine that bank involvement in physical commodities imposed systemic risks to the U.S. financial system, it could recommend or take measures to restrict or restructure those activities.

Finally, Section 620 of the law requires federal bank regulatory agencies to conduct a study of appropriate banking activities. Work on that study is underway. If the study were to conclude that conducting physical commodity activities, in whole or in part, is inappropriate for federally insured banks, their holding companies, or affiliates, the study could recommend measures to reduce, restructure, or even eliminate some of those activities.

Most of the Dodd-Frank provisions are not fully in effect, and the required Section 620 study is not yet complete. Multiple agencies are in charge of their implementation, and multiple outcomes are possible. Depending upon agency implementation, each of these Dodd-Frank provisions offers tools that could be used to discourage, reshape, or reduce bank involvement with physical commodities.

(4) Other Agencies

In addition to federal banking regulators, other federal agencies also exercise oversight of various aspects of bank involvement with physical commodities. They include agencies that oversee U.S. commodities markets; electricity markets and energy production; commodity-related securities; and a wide range of commodity-related environmental and safety issues.

Commodity Markets. The Commodity Futures Trading Commission (CFTC) is charged with overseeing the fair and orderly operation of commodity futures, swaps, and options markets, whether trading takes place on an exchange, swap execution facility, or over-the-counter. The CFTC is also charged with preventing, detecting, and punishing commodity price manipulation and excessive speculation. While the CFTC does not have direct authority over physical commodity markets, those markets can and do affect prices on the financial markets, and can lead to misconduct within the CFTC's jurisdiction. The lack of transparency in many of the physical markets, as well as the ability of prices or actions in one market to affect prices in another market, further complicate CFTC oversight. Since major U.S. banks now dominate commodity swaps and are major traders of commodity futures and options, CFTC oversight responsibilities include monitoring and reviewing their conduct.

Energy Regulation. The Federal Energy Regulatory Commission (FERC) is charged with ensuring U.S. electricity prices are just and reasonable. In addition, FERC is charged with

ensuring energy reliability, which includes overseeing energy production facilities, distribution networks, and electrical grids, among other tasks. Its work includes oversight of power plants run on oil, natural gas, solar, wind, geothermal, biofuel, and other energy sources, as well as refineries that produce a wide variety of oil-based products, such as jet fuel, heating oil, and bunker fuel. FERC's mission also includes preventing price and market manipulation in electricity markets. Since major U.S. banks have now become participants in many U.S. electricity markets, FERC oversight responsibilities include reviewing their conduct.

Commodity-Related Securities. While commodity prices used to be the product of transactions in the physical or financial commodity markets, today they are also affected by transactions in the securities markets. The Securities and Exchange Commission (SEC) is charged with ensuring the fair and orderly operation of U.S. capital markets, including multiple stock exchanges and security-based swaps markets. The SEC also oversees the issuance and sale of a wide variety of commodity-related securities, including securities linked to commodity index swaps and commodity-based exchange traded funds (ETFs). The agency is also charged with detecting and punishing misconduct, including insider trading, price manipulation, and securities fraud. Since major U.S. banks often design, administer, and trade commodity-related securities, SEC oversight responsibilities now include examining their conduct.

Environmental and Safety Oversight. A fourth category of federal agencies with commodity-related oversight encompasses agencies responsible for overseeing a wide range of environmental and safety issues. The Environmental Protection Agency (EPA), which is primarily charged with preventing pollution, has oversight responsibilities that affect a broad range of commodity-related activities, from refineries to smelting facilities, mining operations, and power plant emissions. The Coast Guard, which is charged with ensuring marine safety and dealing with water-based oil spills, oversees oil tankers, ships that transport other types of commodities such as coal, grain, or iron ore, and port facilities used to load and unload commodity cargos. The responsibilities of the Department of Transportation (DOT) include oversight of land-based oil storage tanks, oil and gas pipelines, trucks, and railroads, all of which are used by commodity-related businesses. The Department of Energy issues energy export licenses and oversees a vast range of energy-related issues. The Mine Safety Administration is charged with ensuring that U.S. mines operate in a safe manner. The U.S. Department of Agriculture (USDA) oversees grain elevators and food safety. The Occupational Safety and Health Administration (OSHA) is charged with ensuring safe workplace operations.

This federal agency list is far from exhaustive and does not even begin to address regional, state, local, or international authorities that may have oversight or regulatory responsibilities related to physical commodities. As noted earlier, when banks, through their financial holding companies, initiate activities involving crude and refined oil products, natural gas, coal, uranium, solar and wind energy, metals, agricultural products, pipelines, shipping, railroads, refineries, mining, smelting, uranium enrichment, and electricity generation and distribution, among others, a massive network of complex regulations and overlapping regulatory authorities follow.

While this Report does not focus on the oversight efforts of non-banking federal agencies, they, too, play a critical role in the physical commodity activities undertaken by banks and their holding companies.

III. OVERSEEING PHYSICAL COMMODITY ACTIVITIES

The Federal Reserve Board of Governors has exclusive responsibility for regulating holding companies that own or control banks, and has played a central role in delineating the extent of their allowable involvement with physical commodities. Prior to enactment of the Graham-Leach-Bliley Act of 1999, the Federal Reserve permitted very little physical commodity activities. That stance changed after the Graham-Leach-Bliley Act authorized banks and their holding companies to engage in a broader array of activities, including those involving physical commodities.

Since then, drawing on authority from either the Gramm-Leach-Bliley Act or the Bank Holding Company Act, financial holding companies have engaged in physical commodity activities which they assert are:

(1) "financial in nature" or "incidental" to financial activities,
(2) non-financial, but found by the Federal Reserve to be "complementary" to financial activities,
(3) "grandfathered" under the Graham-Leach-Bliley Act, or
(4) qualified "merchant banking" investments.

The Federal Reserve's oversight of the resulting physical commodity activities can be seen as falling generally into two phases. In the first phase, from 2000 to 2008, the Federal Reserve generally permitted financial holding companies to expand and deepen their physical commodity activities. In the second phase, from 2009 to the present, after the financial crisis raised concerns about hidden risks to the U.S. financial system, the Federal Reserve began to reconsider bank involvement with physical commodities. A newly created Federal Reserve Risk Secretariat identified bank involvement with physical commodities as a major emerging risk and dedicated resources for a multi-year special review of the issue. The special review surveyed ten financial holding companies' physical commodity activities, marked the growth in the variety and dollar value of those activities, and identified multiple concerns including operational, catastrophic event, and reputational risks, inadequate risk management, insufficient capital and insurance, and ineffective regulatory safeguards.

While the review was underway, the Federal Reserve began taking some steps to curb high risk physical commodity activities at bank holding companies, including by halting previously permitted activities, delaying or denying requests for expanded activities, and adopting changes to capital rules that increased protections against commodity-related risks. At the same time, the Federal Reserve left unresolved major issues about what physical commodities activities were permissible under the law, permitted a wide range of risky activities, and failed to close loopholes exploited by some financial holding companies to weaken the impact of limits on the size of their physical commodity holdings. In early 2014, the Federal Reserve solicited public comment on whether it should propose new regulatory limits on banks with physical commodities, but has yet to propose a rulemaking.

A. Expanding Physical Commodity Activities, 2000-2008

From 2000 to 2008, the Federal Reserve steadily expanded the range of allowable physical commodity activities by financial holding companies, enabling them to become major participants in markets for a wide array of commodities, from uranium[202] to natural gas[203] to electricity.[204] During this phase, among other measures, the Federal Reserve issued orders explicitly authorizing expanded commodity activities, provided relaxed interpretations of Gramm-Leach-Bliley provisions on permissible financial, complementary, grandfathered, and merchant banking activities, and failed to resolve key issues that would limit those activities.

(1) Expanding Permissible "Financial" Activities

Historically, the Bank Holding Company Act of 1956 has restricted holding companies that own or control banks to engaging in "banking" activities or activities determined by the Federal Reserve "to be so closely related to banking … as to be a proper incident thereto."[205] The Gramm-Leach-Bliley Act of 1999 gave financial holding companies greater leeway, allowing them to engage in any activity, or retain the shares of any company engaged in any activity, that the Federal Reserve determined was "financial in nature or incidental to such financial activity."[206] The Federal Reserve was given sole authority to define which holding company activities were "financial in nature" or "incidental" to a financial activity.[207]

From 2000 to 2008, the Federal Reserve used its new authority to expand the physical commodity activities that financial holding companies were allowed to conduct. In Regulation Y, the Federal Reserve had created a non-exclusive list of "permissible nonbanking activities" for bank holding companies.[208] That lengthy list was revised to include the following commodity-related activities:

- providing "advice with respect to any transaction in foreign exchange, swaps, and similar transactions, commodities, and any forward contract, option, future, option on a future, and similar instruments;"[209]

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[202] See discussion below involving Goldman Sachs.
[203] See discussion below involving Morgan Stanley.
[204] See discussion below involving JPMorgan.
[205] See Section 4 of the Bank Holding Company Act of 1956, P.L. 84-511, codified at 12 U.S.C. §1843(a) and (c)(8).
[206] 12 U.S.C. §1843(k).
[207] Under the bank powers clause of the National Bank Act, 12 U.S.C. §24 (Seventh), the OCC has sole authority to determine what activities constitute the "business of banking" and so qualify as a "banking" activity, as explained in Chapter II. Because the OCC is charged with defining banking activities, its determinations necessarily affect the determinations made by the Federal Reserve regarding what activities are incidental to banking.
[208] 12 C.F.R. §225.28. Regulation Y contains the key rules for bank holding companies. It lists permissible activities for financial holding companies in 12 C.F.R. §225.86 (listing activities that are "financial in nature or incidental to a financial activity") and permissible nonbanking activities for all bank holding companies in 12 C.F.R. §225.28 (listing activities that are "so closely related to banking or managing or controlling banks as to be a proper incident thereto"). Section 225.86 explicitly incorporates all of the activities listed in Section 225.28.
[209] 12 C.F.R. §225.28(b)(6)(iv) (1997).

- allowing a subsidiary to register with the CFTC as a futures commission merchant, execute and clear futures and options on regulated exchanges, and act as an agent to trade commodities for clients;[210] and
- engaging as principal, subject to some limitations, in "forward contracts, options, futures, options on futures, swaps, and similar contracts, whether traded on exchanges or not, based on any rate, price, financial asset (including gold, silver, platinum, palladium, copper, or any other metal approved by the Board), nonfinancial asset, or group of assets, other than a bank-ineligible security."[211]

The Federal Reserve also amended Regulation Y to give bank holding companies more authority to make or take delivery of physical commodities. Originally, Regulation Y limited bank holding companies to commodity transactions that provided for cash settlement of the transaction or for the assignment, termination, or offset of any physical commodities, so that a bank holding company could not be required to take actual delivery of any physical commodity. In 2003, the Federal Reserve amended the rule to also allow bank holding companies to enter into commodity contracts that provided for the delivery of physical commodities, so long as the holding company made "every reasonable effort to avoid taking or making delivery of the asset underlying the contract" and, if it did take delivery, did so by taking paper title to the commodities or arranging for their delivery to another party on an "instantaneous, pass-through basis."[212] The regulation also limited bank holding companies to trading commodities that had been approved by the CFTC for trading on an exchange.[213]

Over time, the expansion of permissible activities under Regulation Y enabled bank holding companies to engage in a wider range of commodity-related financial transactions, including, for the first time beginning in 2003, transactions that could result in their taking or making delivery of physical commodities.

(2) Authorizing Commodity-Related "Complementary" Activities

The Graham-Leach-Bliley Act also gave the Federal Reserve sole authority to permit financial holding companies to engage in any activity, or retain the shares of any company engaged in any activity that the Federal Reserve first determined was "complementary to a financial activity."[214] The Federal Reserve has interpreted this statutory provision as allowing it to permit an activity that "appears to be commercial rather than financial in nature but that is meaningfully connected to a financial activity such that it complements the financial activity."[215]

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[210] 12 C.F.R. §225.28(b)(7)(iv) and (v) (1997).

[211] 12 C.F.R. §225.28(b)(8)(ii)(B) (2003); See also, e.g., 2003 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Citigroup, Inc., 89 Fed. Res. Bull. 508, 509 (12/2003) (hereinafter "Citigroup Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdfCitibank Order (containing the Federal Reserve's summary of commodity related activities authorized by Regulation Y as of 2003).

[212] 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B)(3).

[213] 12 C.F.R. §225.28(b)(8)(ii)(B)(4).

[214] 12 U.S.C. §1843(k).

[215] See. e.g., Citigroup Order, at 508, 509.

During the legislative process leading to enactment of the Gramm-Leach-Bliley Act, this complementary provision was presented as a way to allow financial holding companies to engage in a limited amount of low risk activities that would support their banking operations, such as selling data processing services that took advantage of excess capacity in bank technology systems.[216] The legislative record contains little or no mention of commodities. In addition, complementary activities were generally expected to be insignificant relative to the overall financial activities of the financial holding company and its affiliates.[217] Since enactment, however, the complementary provision has been used almost exclusively to approve greater bank involvement with physical commodities,[218] and revenues related to physical commodities activities have grown into billions of dollars.

Prior Notice and Approval. What constitutes a "complementary" activity is not defined by the statute. Rather, the Gramm-Leach-Bliley Act established a process through which such activities could be authorized by the Federal Reserve on a case-by-case basis.[219] A financial holding company seeking to rely on the Act's complementary authority must first notify and obtain approval from the Federal Reserve of the proposed activities.[220] Under implementing regulations issued by the Federal Reserve, the financial holding company must file an application describing each proposed activity, its proposed size and scope, the financial activity to which it would be complementary, how the proposed activity would complement the financial activity, the attendant risks, and the "public benefits" that would be produced.[221]

In their applications requesting permission to engage in "complementary" commodity activities, the financial holding companies gave several reasons. One commonly cited reason was that increased access to information about physical commodity activities would help the financial holding company in its commodity trading activities, such as in the futures and swaps markets. For example, in its 2005 application for complementary authority, JPMorgan explained that engaging in physical commodities activities would:

> "position JPM Chase in the supply end of the commodities markets, which in turn will provide access to information regarding the full array of actual produce and end-user activity in those markets. The information gathered through this increased market participation will help improve projections of forward and financial activity and supply

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[216] See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?," hearing before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, S. Hrg. 113-67 (7/23/2013), at 5, written testimony of Saule T. Omarova, Professor of Law, (hereinafter "Omarova Testimony") http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=6d49a599-f7dc-4c1f-9455-fa8d891f04c6; "The Merchants of Wall Street: Banking, Commerce, and Commodities," Professor Saule Omarova, 98 Minnesota Law Review 265, 288 (2012) (hereinafter "The Merchants of Wall Street"); See also 145 Cong. Rec. H11529 (11/4/1999) (House Banking Chairman Leach: "It is expected that complementary activities would not be significant relative to the overall financial activities of the organization.").

[217] See, e.g., 145 Cong. Rec. H11529 (daily ed. Nov. 4, 1999) (Statement of Chairman Leach) ("It is expected that complementary activities would not be significant relative to the overall financial activities of the organization.").

[218] The Federal Reserve told the Subcommittee that all of the complementary orders it has issued, save one, approved commodities activities. 12/13/2013 Federal Reserve briefing of the Subcommittee. See also Omarova Testimony, at 5.

[219] 12 U.S.C. §1843(j).

[220] 12 U.S.C. §1843(j)(1); 12 C.F.R. §225.89(a).

[221] 12 C.F.R. §225.89(a).

> vital price and risk management information that JPM Chase can use to improve its financial commodities derivative offerings." [222]

JPMorgan also stated that it "must have the ability to enter into physically settled transactions" in order to "compete effectively" in offering commodity-linked products to its customers,[223] and that the authority would allow them to "hedge … commodities derivatives positions more effectively and cheaply."[224] All three reasons indicate that the primary motivating factor for entering into physical commodity activities was to complement the financial holding company's financial activities, including its participation in the commodity-related futures and swaps markets.

Before approving a request for complementary authority, the Federal Reserve is legally required to make an explicit finding that the proposed activity meets the statutory requirements that it would "not pose a substantial risk to the safety or soundness of depositary institutions or the financial system generally,"[225] and that it "can reasonably be expected to produce benefits to the public … that outweigh possible adverse effects."[226] The statutory list of possible public benefits includes "greater convenience, increased competition, or gains in efficiency," while the list of possible adverse effects includes "undue concentration of resources, decreased or unfair competition, conflicts of interests, unsound banking practices, or risk to the stability of the United States banking or financial system."[227]

Complementary Orders. From 2003 to 2008, the Federal Reserve used its case-by-case approval process to issue a series of orders and letters authorizing financial holding companies to engage in a variety of physical commodity activities found to be "complementary" to their trading in commodity-related financial instruments.[228] Ultimately, thirteen financial holding companies were approved to engage in various categories of complementary activities, including purchasing and selling physical commodities in the spot markets,[229] making and taking delivery of physical commodities to settle derivatives transactions,[230] entering into energy tolling agreements,[231] and providing energy management services.[232]

The first such order, granted in 2003, permitted Citigroup, through its then commodity trading subsidiary, Phibro, to buy and sell oil, natural gas, agricultural products, and other commodities in the physical spot markets, and to take and make delivery of physical

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[222] 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89," PSI-FederalReserve-01-000004 - 028, at 016.
[223] Id. at 015.
[224] Id.
[225] 12 U.S.C. §1843(k)(1)(B).
[226] 12 U.S.C. §1843(j)(2)(A). See also 12 C.F.R. §225.89(b)(3).
[227] 12 U.S.C. §1843(j)(2)(A).
[228] See, e.g., Citigroup Order, at 508.
[229] Id.
[230] Id.
[231] See 2011 "Work Plan for Commodity Activities at SIFIs," presentation prepared by the Federal Reserve Bank of New York (hereinafter, "2011 Work Plan"), FRB-PSI-200455 - 476, at 458.
[232] Id.

commodities to settle commodity-linked derivative transactions.[233] This was the first time the Federal Reserve had allowed a bank holding company to buy and sell physical commodities in the physical spot markets.

To reduce the risks associated with these new activities, the order required Citigroup to make a number of commitments to limit the size and scope of its physical commodity activities. Among other measures, the order stated:

- That as a condition of the order, Citigroup must cap the market value of its commodities holdings resulting from trading activities at 5% of its consolidated Tier 1 capital;
- Citigroup must also alert the Federal Reserve if the market value exceeded 4% of its Tier 1 capital;
- Citigroup may make or take physical delivery of only those commodities which have been approved by the Commodity Futures Trading Commission (CFTC) for trading on U.S. futures exchanges, unless it separately obtained permission from the Federal Reserve;
- Citigroup was not authorized to own, operate, or invest in facilities for the extraction, transportation, storage, or distribution of commodities; and
- Citigroup was not authorized to process, refine, or otherwise alter commodities.[234]

Over the next five years, the Federal Reserve issued similar complementary orders or letters to eleven other major financial holding companies. Those orders or letters were issued to UBS[235] and Barclays[236] in 2004; JPMorgan in 2005;[237] Deutsche Bank,[238] Societe Generale,[239] Wachovia,[240] and Fortis[241] in 2006; Bank of America,[242] Credit Suisse,[243] and BNP Paribas[244] in

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[233] See Citigroup Order. In 2009, Citigroup sold Phibro to Occidental Petroleum Corporation. 10/9/2009 Citigroup Inc. press release, "Citi to Sell Phibro LLC," http://www.citigroup.com/citi/press/2009/091009a.htm.

[234] Id.

[235] 2004 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by UBS AG, 90 Fed. Res. Bull. 215 (Spring 2004), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q22004.pdf .

[236] 2004 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Barclays Bank PLC, 90 Fed. Res. Bull. 511 (Autumn 2004), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q42004.pdf .

[237] 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JP Morgan Chase & Co., 92 Fed. Res. Bull. C57 (2006)(hereinafter "JPMorgan Order")(effective as of November 18, 2005), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf. JPMorgan has subsequently sought and received additional complementary authority.

[238] 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Deutsche Bank AG, 92 Fed. Res. Bull. C54 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

[239] 2006 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Societe Generale, 92 Fed. Res. Bull. C113 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

[240] 4/13/2006 Federal Reserve letter regarding Wachovia Corporation. PSI-FRB-20-000012-014.

[241] 9/29/2006 Federal Reserve letter regarding Fortis S.A./N.A., PSI-FRB-19-000027-030; and later 94 Fed. Res. Bull. C20 (2008), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf.

[242] 4/24/2007 Federal Reserve letter regarding Bank of America Corporation. PSI-FRB-20-000001-005.

2007; and Wells Fargo in 2008.[245] Each permitted the named financial holding company, either directly or through one or more affiliates, to engage in the same types of physical commodity activities as Citigroup. In addition, each required the financial holding company to comply with specified safeguards such as size restrictions, risk management controls, and prohibitions against owning, operating or investing in "facilities for the extraction, transportation, storage, or distribution" of commodities, and against processing, refining or altering commodities.[246]

In 2008, the Federal Reserve issued a complementary order for the Royal Bank of Scotland (RBS) in which it authorized the firm to engage in an even greater range of physical commodities activities.[247] First, the RBS Order omitted a limitation in the prior orders that had restricted the banks to trading commodities that had been approved for trading by the CFTC on U.S. exchanges. Instead, after describing the relevant over-the-counter (OTC) markets as "sufficiently liquid," the order authorized RBS to trade in nickel, butane, asphalt, kerosene, marine diesel, and other oil products that had not received CFTC approval for trading on U.S. exchanges.[248]

Second, the order allowed RBS to contract with a third party to "refine, blend, or otherwise alter" its physical commodities, essentially authorizing RBS to sell crude oil to a refinery and buy back the refined oil products.[249] In still another major expansion, the order allowed RBS to enter into long-term electricity supply contracts with large industrial and commercial customers, and to enter into "tolling agreements" and "energy management" agreements with power generators.[250] Collectively, these authorities gave RBS permission to

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[243] 3/27/2007 Federal Reserve letter regarding Credit Suisse Group, PSI-FRB-20-000006-011.
[244] 8/31/2007 Federal Reserve letter regarding BNP Paribas, PSI-FRB-19-000012-017.
[245] 4/10/2008 Federal Reserve letter regarding Wells Fargo & Company, PSI-FRB-19-000018-023.
[246] See 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 459.
[247] 2008 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60 (2008) (hereinafter "RBS Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf. The order applied to both the Royal Bank of Scotland and a joint venture called RBS Sempra Commodities that the Royal Bank of Scotland had formed with Sempra Energy, a U.S. energy company.
[248] Id.
[249] Id. See also The Merchants of Wall Street, at 304-05. Prior Federal Reserve complementary orders had prohibited holding companies from engaging in such activities. A few months later, the Federal Reserve provided the same authority to JPMorgan. See 11/25/2008 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89," PSI-FederalReserve-01-000553 - 558, at 555 (requesting authority to refine, blend, or alter physical commodities); 4/20/2009 letter from Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (granting JPMorgan's request). JPMorgan used that authority to set up an arrangement in which it sold crude oil to a refinery in Philadelphia and bought 100% of the refined oil products. See, e.g., 1/24/2013 "Commodities Physical Operating Risk," prepared by JPMorgan, FRB-PSI-301379 - 382, at 381 (Chart entitled, "Physical Operating Risk Review of Project Liberty").
[250] RBS Order, at C64. A tolling agreement typically allows the "toller" to make periodic payments to a power plant owner to cover the plant's operating costs plus a fixed profit margin in exchange for the right to all or part of the plant's power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. Id. at C64. An energy management agreement typically requires the "energy manager" to act as a financial intermediary for the power plant, substituting its own credit and liquidity for the power plant to facilitate the power plant's business activities. The energy manager also typically supplies market information and advice to support the power plant's efforts. Id. at C65.

engage in an unprecedented range of physical commodity activities.[251] At the same time, as in prior orders, the Federal Reserve conditioned its approval of the new commodity activities on RBS' meeting certain prudential requirements, such as adequate risk controls and size restrictions. After issuing the RBS order, the Federal Reserve granted similar authority to other financial holdings companies as well.[252]

In sum, since the first complementary order was issued less than a dozen years ago, the Federal Reserve has granted complementary authority for financial holding companies to:

- buy and sell physical commodities like oil, natural gas, metal, and agricultural products in the physical spot markets;
- take and make delivery of physical commodities to satisfy derivative trades without Regulation Y's requirement of taking all reasonable steps to avoid physical delivery;
- enter into tolling agreements and energy management contracts with power plants;
- sell crude oil to refineries and buy back the refined oil products; and
- enter into long term commodity supply contracts.

Without the complementary orders and letters issued by the Federal Reserve, many of those physical commodity activities would not otherwise have been permissible "financial" activities under federal banking law.[253] By issuing those complementary orders, the Federal Reserve directly facilitated the expansion of financial holding companies into new physical commodity activities.

(3) Delaying Interpretation of the Grandfather Clause

A third legal basis for financial holding companies engaging in physical commodity activities involves the Gramm-Leach-Bliley Act's "grandfather" clause. This clause was enacted over fourteen years ago in 1999, yet its contours have yet to be delineated by the Federal Reserve in regulation, guidance, or order. Resolving questions about its scope and meaning gained urgency six years ago, in 2008, after Goldman Sachs and Morgan Stanley converted to bank holding companies and became the first financial institutions to invoke the clause as the legal basis for engaging in a wide range of physical commodity activities that would not otherwise be permitted under law.[254] Despite Goldman's and Morgan Stanley's increasing reliance on the

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[251] See also 4/10/2008 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Wells Fargo & Co., 90 Fed. Res. Bull. 215 (2008), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_q22004.pdf.

[252] For example, the Federal Reserve later granted JPMorgan similar complementary authority to engage in refining and power plant activities. See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (on refining authority); 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580 (on power plant activities).

[253] Subcommittee briefing by the Federal Reserve (12/13/2013). It is important to note, however, that neither Goldman nor Morgan Stanley has requested or received a complementary order; each relies instead on the Gramm-Leach-Bliley grandfather and merchant banking authorities to conduct much of their physical commodity activities, as explained in the following sections.

[254] Goldman cited the clause in its original application to convert to a bank holding company as justification for continuing all of its then existing commodity activities. See 9/21/2008 Goldman application to the Board of Governors to the Federal Reserve System, FRB-PSI-303638 - 662, at 648 - 649.

grandfather clause to conduct otherwise impermissible commodity activities, in six years, the Federal Reserve has taken no action to clarify its scope and proper interpretation.

As explained earlier, the Gramm-Leach-Bliley grandfather clause, which appears in Section 4(o) of the Bank Holding Company Act, provides that any company that becomes a financial holding company after November 12, 1999, may "continue to engage in ... activities related to the trading, sale, or investment in commodities and underlying physical properties," provided that several conditions are met.[255] Those conditions include that:

- the company "lawfully was engaged, directly or indirectly, in any of such activities as of September 30, 1997, in the United States";
- the company's non-authorized commodity assets do not exceed 5% of the company's total consolidated assets or any higher threshold set by the Federal Reserve; and
- the company does not permit a subsidiary that is engaged in grandfathered commodities activities to cross-market its products and services to an affiliated bank.[256]

Differing Interpretations. The grandfather clause states that a firm can "continue" its commodities activities provided that it was lawfully engaged in "any" of such activities in the United States as of September 30, 1997. This statutory language has resulted in at least two very different interpretations of the law, neither of which has been validated to date by the Federal Reserve.

The first interpretation contends that the grandfather clause should be read narrowly, reasoning that its sole purpose was to protect firms from having to discontinue or disinvest their commodity activities or assets upon becoming a financial holding company. It views the grandfather clause as preserving only those specific commodity activities that originated prior to the trigger date in 1997, and that were still ongoing in the United States on the date that the firm converted to a financial holding company. In contrast, the second interpretation contends that the grandfather clause should be read expansively, so that if a financial holding company's subsidiaries, affiliates, or predecessor companies conducted any type of physical commodity activities in the United States to any degree prior to the trigger date in 1997, then the financial holding company is entitled to engage in all types of physical commodity activities at any time into the future, subject only to the 5% cap imposed by the law.[257]

The first reading essentially focuses on the word, "continue," while the second emphasizes the word, "any." The Federal Reserve, which, again, has sole authority to interpret the grandfather clause, has yet to issue any guidance on the correct interpretation.

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[255] 12 U.S.C. §1843(o).
[256] Id.
[257] See, e.g., 3/25/2009 letter from Morgan Stanley legal counsel to Federal Reserve, FRB-PSI-706298 - 304, at 299-300; Guynn Testimony, at 11.

Legislative History. Grandfather clauses, by their nature, typically safeguard existing activities, rather than authorize new or expanded activities.[258] The legislative history indicates that, in keeping with that approach, the Gramm-Leach-Bliley grandfather clause was presented as a way to avoid forcing a firm to discontinue or divest itself of existing commodity activities or assets in order to become a financial holding company. The Senate Banking Committee Chairman at the time, Senator Phil Gramm, who offered the amendment that formed the basis for Section 4(o), entitled it: "Gramm Amendment on Grandfathering Existing Commodities Activities." The amendment also contained this short explanation of its purpose:

> "The above amendment assures that a securities firm currently engaged in a broad range of commodities activities as part of its traditional investment banking activities, is not required to divest certain aspects of its business in order to participate in the new authorities granted under the Financial Services Modernization Act. This provision 'grandfathers' existing commodities activities."[259]

The author's explanation of his amendment indicates it was intended to prevent divestitures of "existing" commodities activities. It makes no mention of any intent to authorize new commodities activities or "any" and all commodities activities. Accordingly, the explanation of the Gramm amendment suggests that the grandfather clause should be read as a preservation of activities then-existing when a company converted to a financial holding company status, and not as an authorization to conduct additional or new activities. This reading is also consistent with the use of the word "continue" in the statutory text.

A second issue is what "existing commodities activities" were intended to be covered by the clause. With respect to this question, the Committee Report on the bill stated:

> "[A]ctivities relating to the trading, sale or investment in commodities and underlying physical properties shall be construed broadly and shall include owning and operating properties and facilities required to extract, process, store and transport commodities."[260]

This Committee Report language focuses on protecting from divestment any existing activity that fits within a broad interpretation of the terms "commodities" and "underlying physical properties." Consistent with the explanation of the Gramm amendment, it does not express any intention to authorize new commodities activities not already underway as of the trigger date and the date of conversion to a financial holding company.

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[258] See, e.g., Pac. N.W. Venison Producers v. Smitch, 20 F.3d 1008, 1012-13 (9th Cir. 1994) (stating that the grandfather clause in a Washington State Department of Wildlife regulation banning import of exotic animals applied to new sales and imports but allowed the continued possession of animals legally held within the state prior to the passage of the regulation); see also "definition of 'grandfather clause,'" Farlex Financial Dictionary (10/8/2014), http://financial-dictionary.thefreedictionary.com/Grandfather+Clause (defining the term grandfather clause as "[a] provision included in a new rule or regulation that exempts a business that is already conducting business in the area addressed by the regulation from penalty or restriction").

[259] Committee Amendment No. 9, "Gramm Amendment on Grandfathering Existing Commodities Activities," offered by Senator Phil Gramm during committee markup of the Financial Modernization Act, (3/4/1999), http://banking.senate.gov/docs/reports/fsmod99/gramm9.htm.

[260] Gramm-Leach-Bliley Act, H.R. Committee Report No. 104-127, pt. 1, at 97 (5/18/1995).

Goldman and Morgan Stanley. From 2000 until 2008, no financial holding company relied on the grandfather clause to authorize its physical commodity activities.[261] That changed when Goldman Sachs and Morgan Stanley converted to bank holding companies during the depths of the financial crisis in 2008.

In its September 2008 application to become a bank holding company, Goldman explicitly cited the grandfather clause as authorizing it to continue to conduct its physical commodity activities.[262] Since then, both Goldman and Morgan Stanley have asserted that the grandfather clause provides legal authority for them to, not only continue physical commodity activities underway in 2008, but also renew past activities and engage in entirely new commodities activities.

In its 2008 application to become a bank holding company, Goldman's legal counsel wrote:

> "The Section 4(o) exemption does not require that a company have been engaged prior to September 30, 1997 in all the activities that it seeks to grandfather under Section 4(o) at the time the company becomes a BHC [Bank Holding Company], rather it only requires that the company have been engaged prior to that date in commodity-related activities that were not permissible for a BHC in the United States on that date."[263]

Similarly, in a 2009 letter to the Federal Reserve, Morgan Stanley's legal counsel wrote:

> "[T]he plain language of Section 4(o) authorizes a qualifying financial holding company to continue to engage in any activities related to trading, selling, and investing in any type of commodities and related physical properties or facilities, if certain conditions are satisfied. Section 4(o) does *not* merely authorize the retention of investments in commodities or related physical properties or facilities made or held on a certain date. Instead, it expressly extends to the ***continuation*** of any ***activities*** related to the trading, selling, and investing in any type of commodities and related properties or facilities, if certain conditions are satisfied."[264]

In internal documents, the Federal Reserve has taken note of the Goldman and Morgan Stanley interpretations of the grandfather clause, observing that the firms have asserted an expansive reading that allows them to engage in "trading, selling, and investing in any type of

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[261] Subcommittee briefing by the Federal Reserve (12/13/2013). The Federal Reserve told the Subcommittee that, to date, only two financial holding companies, Goldman and Morgan Stanley, have cited the grandfather clause as the legal basis for engaging in otherwise impermissible physical commodity activities.

[262] 9/21/2008 "Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC," prepared by Goldman, FRB-PSI-303638 - 662, at 648 - 649, 661.

[263] Id. at 649.

[264] 3/25/2009 letter from Morgan Stanley legal counsel to Federal Reserve, FRB-PSI-706298 - 304, at 298 - 300 (emphasis in original).

commodity and its related physical properties or facilities, including mining, processing, storage, transport, generation and refining, and any related activities."[265]

To better understand the issues related to the grandfather clause, from 2009 to 2011, a Federal Reserve team of examiners undertook an in-depth review of the two financial holding companies' physical commodity activities, including comparing their activities prior to the 1997 trigger date and in 2010.[266] During that review, a detailed status report was prepared indicating that both financial holding companies had greatly expanded their commodity activities and incurred numerous new risks, while claiming their new activities were permitted under the grandfather clause.[267] That internal Federal Reserve report's findings included the following:

> "The scope and size of commodity based industrial activities and trading in physical and financial commodity markets at MS [Morgan Stanley] and GS [Goldman Sachs] has increased substantially since 1997.
>
> There are a large number of new commodities traded by these firms today which they did not trade in 1997 ... The new commodities traded today by MS number 37 and GS 35 (this is a representative sampling and represents a lower bound). Several of these commodity related activities involve substantially new types of risks emanating from newer deal and investment structures, expansion in new markets (e.g. uranium by GS, emission credits), and geographic regions ....
>
> Much of the new business conducted by MS and GS is in the form of industrial processes involving commodities. The expansion of these firms into power generation, shipping, storage, pipelines, mining and other industrial activities has created new and increased potential liability due to the catastrophic and environmental risks associated with the broader set of industrial activities.
>
> Below are examples of industrial processes which are new or greatly expanded today from 1997:
>
> - Leasing of ships and ownership of shipping companies at MS and GS
> - New ownership, and expanded leasing of oil storage facilities at MS
> - Ownership of companies owning oil refineries at MS
> - Ownership of coal mines and distribution at GS
> - New ownership of power plants at GS and expanded ownership at MS
> - Leasing of power generation at MS and GS
> - Ownership of retail gasoline outlets at MS
> - Ownership of royalty interests from gold mining at MS
> - Ownership and development of solar panels at GS ....

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[265] 2011 Work Plan, FRB-PSI-200455, at 461 [sealed exhibit].
[266] See undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 [sealed exhibit].
[267] Id.

These types of industrial activities are of greater concern as they are held over longer holding periods than more purely financial activities and are more difficult to value and risk manage due to the absence of market liquidity. ...

More recently, these firms have expanded their investment activity in emerging markets ... [which] are more subject to liquidity risks and price shocks ....

The expansion of these firms into power generation, shipping, storage, pipelines, mining and other industrial activities has created new and increased potential liability for firms with access to the federal safety net supporting the banking system for catastrophic event risk arising from industrial control failures – including environmental liability in particular – of a type that is difficult for bank supervisors to dimension.

The severity of this risk is in proportion to the potential damage and associated liability of industrial accidents in handling different commodities. Some, like uranium, may be more severe than others. ...

Furthermore, the scale of bank involvement in industrial commodity processes is not widely understood – even within the bank regulatory community. As a result, it is possible that losses within the banking sector arising from these activities will be surprising and further lead to questions regarding the integration of this industry within banking.

Lastly, there appears to be differences between banks and industrial energy firms in income recognition practices, capitalization methods and risk management practices. It is possible that bank incentives to expand in this industry are affected by their use of mark-to-market valuation for activities that are otherwise accounted for as accrual income at energy firms – and rates of capitalization for these activities that are much less than those used by energy firms. ...

The commodities businesses at MS and GS are material drivers of firm profitability, capitalizing on economics in a wide breadth of commodity markets and activities. Risk exposures run the gamut from exchange traded futures to leases on power plants and oil storage facilities to equity investments in coal mines and oil shipping operations."[268]

The report also included the following chart comparing the banks' commodity activities in 1997 versus 2010.[269]

[268] Id. at 428 - 430.
[269] Id. at 433.

The chart below is a comparison of the range of activities from 1997 to 2010, related to financial contract for the physical settlement and delivery of various commodity products.

Chart 1

Goldman Sachs		Morgan Stanley	
Sept 97	**Dec 10**	**Sept 97**	**Dec 10**
Agricultural Products		**Agricultural Products**	
	Barley		
	Cattle		
Cocoa	Cocoa		Cocoa
Coffee	Coffee		
Corn	Corn		Corn
	Cotton		Cotton
	European Rapseed		European Rapseed
	Foreign Products – Pulp		
Hogs	Hogs		
	Rice		
	Rubber		
	Soybean		Soybean Meal
	Soybean Meal		Soybean Oil
	Soybean Oil		Soybeans
	Sugar		Sugar
	Wheat		Wheat
Metals		**Metals**	
Aluminum	Aluminum		Aluminum
	Cooper		Cooper
Bank Eligible*	Gold	Bank Eligible***	Gold
Lead	Lead		Lead
Nickel	Nickel		Nickel
Bank Eligible*	Palladium	Bank Eligible***	Palladium
Bank Eligible*	Platinum	Bank Eligible***	Platinum
Rhodium	Unknown	Rhodium	Unknown
Bank Eligible*	Silver	Bank Eligible***	Silver
	Steel		Steel
	Tin		Tin
Zinc	Zinc		Zinc
		"Base Metals"****	
Emissions/Renewable		**Emissions/Renewable**	
	Blue Source Emission Credits		Carbon Credits
	Ercot Renewable Certificate		CER (Certified Emission Reductions)
	EU Scheme Emission Certificates		ERU (Emission Reduction Units)
	Kyoto Emission Credit		EUA (European Union Allowances)
	PJM Renewable Energy Cert		LEC (Levy Exemption Certificates)
	Rgnl Greenhouse Gas Init Emissns		Nox (Nitrogen Oxide)
	VER (Voluntary Emission Reductions)		ROCS (Renewable Obligation Cert)
			Sox (Sulfer Dioxide)
			VER (Voluntary Emission Reductions)
Energies		**Energies**	
	Butane		Bunker Fuel
	Coal	Coal	Coal
Condensate	Condensate	Crude Oil	Crude Oil
Crude Oil	Crude Oil	Diesel	Diesel
	Diesel	Electricity	Electricity
Electricity**	Electricity		Ethanol
	Freight	Freight	Freight
Fuel Oil	Fuel Oil	Fuel Oil	Fuel Oil
Gasoil	Gasoil	Heating Oil	Heating Oil
Heating Oil	Heating Oil	Jet Fuel	Jet Fuel
Jet Fuel	Jet Fuel		LNG
	LNG		MTBE
Naptha	Naptha		Naphtha
Natural Gas	Natural Gas	Natural Gas	Natural Gas
	Palm Oil		Natural Gas Liquids
	Propane		RBOB
	Temperature		Residual Fuel
Unleaded Gasoline	Unleaded Gasoline	Unleaded Gasoline	Unleaded Gasoline
	Uranium		
Total: 18	**Total**: 52	**Total**: 11	**Total**: 48
	Difference: 35		**Difference**: 37

* The status of trading in these commodities as of 1997 was not reported by the firm, however they are bank eligible commodities.

** Pursuant to the PBSA with Constellation Energy.

*** The status of trading in these commodities as of 1997 was not reported by the firm, however they are bank eligible commodities.

**** The firm's submission only stated "base metals."

SOURCE: Chart Prepared by the Federal Reserve, FRB-PSI-200428, at 433.

Goldman has cited the grandfather clause as its authority to own and trade uranium[270] and own coal mines,[271] two activities that it initiated for the first time after converting to a bank holding company. Similarly, Morgan Stanley has cited the grandfather clause as authority for its ownership of a global network of oil and natural gas storage facilities and pipelines; leasing over 100 oil tankers, LNG transport barges, and other ships; and recent plans to construct and operate compressed natural gas facilities in Texas and Georgia.[272] Both cite the grandfather clause as legal authority for engaging in physical commodity activities which are significantly broader than otherwise permitted for financial holding companies.[273]

Federal Reserve analyses have noted that the banks' expansive interpretation of the grandfather clause has not only enabled them to conduct new, high risk physical commodity activities not otherwise permitted by law,[274] but also created a competitive disparity between Goldman Sachs and Morgan Stanley, on the one hand, and financial holding companies on the other hand that cannot invoke the grandfather clause.[275] In a 2012 internal analysis, the Federal Reserve staff wrote:

> "[Goldman] continues to engage in commodities-related activities and hold commodities-related investments that are generally not permissible under section 4 of the BHC [Bank Holding Company] Act, such as owning and managing power plants and owning storage facilities. GS has requested that the Board determine certain of these activities and

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[270] See 2012 Firmwide Presentation. FRB-PSI-200984 - 1043, at 1000 (listing Nufcor as an asset acquired under Section 4(o)).

[271] See Report of Changes in Organizational Structure, FR-Y-10, Goldman Sachs Group, Inc. (4/14/2010), GSPSICOMMODS00046301 - 317 (indicating its coal mine investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations"); 5/26/2011 Response from Goldman Sachs to the Federal Reserve. FRB-PSI-200600 - 610, at 602. But see 2012 Firmwide Presentation, FRB-PSI-200984 - 201043, at 1000 (indicating CNR, owner of one coal mine, as a merchant banking investment, rather than grandfathered asset).

[272] See, e.g., 9/18/2012 "Morgan Stanley request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve. FRB-PSI-304905 - 913, at 910 (Morgan Stanley "continues to engage in commodities-related activities and hold commodities-related investments that are generally not permissible under section 4 of the BHC Act, such as owning and managing power plants and owning storage facilities. MS has requested that the Board determine certain of these activities and investments are permissible under section 4(*o*)'s permanent grandfather authority. This request remains under consideration by the Legal Division.")[footnote omitted][sealed exhibit]; 9/19/2011 "Morgan Stanley request for a second extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, at 7. FRB-PSI-304896 - 904 [sealed exhibit]; 9/12/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-11-000001 - 008, at 004, 006.

[273] See, e.g., 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 459 (stating that the complementary orders given to the banks would not have allowed them to "own, operate, or invest in facilities for the extraction, transportation, storage, or distribution" of commodities, nor could a financial holding company "process, refine, or otherwise alter" commodities) [sealed exhibit].

[274] See undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 [sealed exhibit].

[275] See 6/21/2011 "Section 4(*o*) of the Bank Holding Company Act – Commodity-related Activities of Morgan Stanley and Goldman Sachs," prepared by the Federal Reserve, FRB-PSI-200936 - 941, at 940 [sealed exhibit].

> investments are permissible under section 4(*o*)'s permanent grandfather authority. This request remains under consideration by the Legal Division."[276]

At the time the Federal Reserve wrote that analysis, questions about the proper scope of the grandfather clause with respect to Goldman and Morgan Stanley had already been pending for four years, without resolution.

The Bank Holding Company Act of 1956 gives the Federal Reserve general authority to interpret and administer the Act, including Sec. 4(o). In particular, Section 5(b) of the Banking Holding Company Act grants the Federal Reserve broad authority to issue orders and regulations necessary to carry out the purposes of the Act and prevent evasions of it.[277] That broad grant of authority provides ample legal foundation for the Federal Reserve to issue regulations or orders delineating the scope of the grandfather clause, including narrowing its interpretation to support the purposes of Act, which have been described as seeking to "limit the comingling of banking and commerce," and "prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank's core financial activities."[278] Financial holding companies that disagreed with the Federal Reserve's interpretation would have an opportunity to challenge it in court under the Chevron standard requiring deference to administrative determinations.[279]

Despite the two banks' growing investment in otherwise impermissible commodity activities and the growing disparity between them and other banks from 2008 to 2014, the Federal Reserve has repeatedly indicated that the permissibility of their activities under the grandfather clause remains an open and pending issue, while also permitting both financial institutions to continue and even expand the commodity activities in question.[280] By failing to

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[276] 9/19/2012 "Goldman Sachs' request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act." internal memorandum prepared by the Federal Reserve, FRB-PSI-304868 - 875. at 872 [footnote omitted][sealed exhibit]. See also 9/20/2011 "Goldman Sachs' request for a second extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act." internal memorandum prepared by the Federal Reserve, FRB-PSI-304860 - 867. at 866 [sealed exhibit]; 7/25/2012 "Presentation to Firmwide Client and Business Standards Committee: Global Commodities," (hereinafter "2012 Firmwide Presentation"), prepared by Goldman Commodities group. FRB-PSI-200984, at 1000 (listing Cogentrix and Nufcor as assets acquired under Section 4(o)).

[277] Section 5(b) states: "The Board is authorized to issue such regulations and orders ... as may be necessary to enable it to administer and carry out the purposes of this Act and prevent evasions thereof." Bank Holding Company Act of 1956. P.L. 84-511. codified at 12 U.S. Code §1844.

[278] "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of New York, FRBNY Economic Policy Review (7/2012), at 3; http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf [footnotes omitted].

[279] Chevron U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842 - 843 (1984) (creating a two-part analysis for reviewing an agency interpretation of a statue: "First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court as well as the agency, must give effect to the unambiguously expressed intent of Congress. ... If, however, the Court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction of the statute. ... Rather, if the statute is silent or ambiguous with respect to the specific issue, the issue for the court is whether the agency's answer is based on a permissible construction of the statute.").

[280] See, e.g., 9/19/2012 "Goldman Sachs' request for a third extension of time to divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, at 5, FRB-PSI-304868 – 875, at 872 [sealed exhibit]; 9/18/2012 "Morgan Stanley request for a third extension of time to

provide a timely interpretation delineating how the grandfather clause should be applied, the Federal Reserve effectively enabled both bank holding companies to deepen their involvement in otherwise unallowable physical commodity activities for more than six years.

In addition, unlike the actions it took to implement the Gramm-Leach-Bliley provision on complementary authority, the Federal Reserve has failed to impose any regulatory safety and soundness-based limitations on the volume of activities that may be conducted under the grandfathering clause.[281] Currently, the only limit on the amount of grandfathered activities is the statutory requirement that they not exceed 5% of the financial holding company's "total consolidated assets."[282] Given the size of Goldman and Morgan Stanley's assets, that limit is set so high as to not function as a restriction at all. In contrast, activities authorized under the complementary authority may not exceed 5% of the firm's Tier 1 capital, while the Volcker Rule limits investments to not more than 3% of a firm's Tier 1 capital, restrictions which result in much lower dollar limits on the activities. Under the Federal Reserve's current practice, a financial holding company could engage in physical commodity activities under the grandfather clause that could be orders of magnitude larger than those authorized under the complementary authority and could even exceed its total Tier 1 capital.

In January 2014, the Federal Reserve solicited public comment on whether it should issue a rulemaking to impose "additional prudential requirements" on financial holding companies to ensure commodity activities conducted under the grandfather clause "do not pose undue risks" to the holding company, an insured bank, or U.S. financial stability.[283] The Federal Reserve asked, in particular, for suggestions on appropriate "safety and soundness, capital, liquidity, reporting, or disclosure requirements" for grandfathered activities.[284] Despite passage of nearly a year, however, the Federal Reserve has taken no further action on this rulemaking effort to curb risks associated with grandfathered commodity activities not otherwise permitted by law.

(4) Allowing Expansive Interpretations of Merchant Banking

A fourth legal basis for financial holding companies engaging in physical commodity activities involves the Gramm-Leach-Bliley Act's merchant banking authority. As with the grandfather authority, the Federal Reserve has allowed financial holding companies to engage in an increasing array of commodity-related merchant banking investments.

As explained earlier, the Gramm-Leach-Bliley Act permitted financial holding companies to purchase up to a 100% ownership interest in non-financial commercial enterprises for a limited period of time, subject to certain limitations.[285] In 2001, the Federal Reserve and

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divest or conform nonbanking activities pursuant to section 4(a)(2) of the BHC Act," internal memorandum prepared by the Federal Reserve, FRB-PSI-304905, at 910 [sealed exhibit].

[281] For more information, see discussion of JPMorgan's involvement with size limits, below.

[282] 12 U.S.C. §1843(o)(2).

[283] "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 13, 3329, 3336 and Question 23, (daily ed. Jan. 21, 2014).

[284] Id.

[285] Gramm-Leach-Bliley Act, Section 4(k)(4)(H); 12 U.S.C. §1843(k)(4)(H). See also "Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act," Congressional Research Service, No. RS21134 (10/22/2004), at 1 ("Before [the Gramm-Leach-Bliley Act], banking companies could use equity-investing authority

Treasury adopted the "Merchant Banking Rule" to spell out some of the parameters of this authority.[286] To limit the risks associated with merchant banking investments, the Federal Reserve initially imposed a size limit on those investments, generally prohibiting merchant banking assets from exceeding 30% of the financial holding company's Tier 1 capital,[287] but that size limit was removed in 2002.[288]

Qualifying Investments. Neither the Gramm-Leach-Bliley Act nor the Merchant Banking Rule explicitly defines the term "merchant banking."[289] Instead, both focus on "qualifying investments." To qualify as a merchant banking investment under the law and the Merchant Banking Rule, an investment must meet a number of requirements, including the following:

- the investment must not be made or held, directly or indirectly, by a U.S. depository institution;[290]
- the investment must be "part of a bona fide ... merchant or investment banking activity," including investments made for the "purpose of appreciation and ultimate resale";[291]
- the financial holding company must use a securities affiliate or an insurance affiliate with a registered investment adviser affiliate to make the investment;[292]
- the investment must be held on a temporary basis, "only for a period of time to enable the sale or disposition thereof on a reasonable basis"[293] and generally for no longer than ten years;[294] and

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only through Small Business Investment Companies (SBICs) and other limited powers. Bank holding companies could own [only] noncontrolling interests in nonfinancial companies: not more than 5% to 10% of voting securities. [The Gramm-Leach-Bliley Act] allows [financial holding companies] into the high-risk, high-reward private equity market.").

[286] See Merchant Banking Rule, 66 Fed. Reg. 8466 (1/31/2001), codified at 12 C.F.R. Part 225, Subpart J, 225.170 et seq.

[287] See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); "Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy, Guidelines; Capital Maintenance: Nonfinancial Equity Investments," 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).

[288] See 67 Federal Register 3786 (2002). The Federal Reserve terminated the size limit after imposing specific capital requirements for merchant banking investments.

[289] The Merchant Banking Rule simply stated that merchant banking activities were "those not otherwise authorized" under Section 4 of the Bank Holding Company Act. 12 C.F.R. §225.170. See also "Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act," Congressional Research Service, No. RS21134 (10/22/2004), at 1 ("Merchant banking mixes banking with commerce. The term comes from European practices, in which *bankers* financed foreign trade and other high risk ventures undertaken by *merchants* such as ship owners and importers for a share of the profits, rather than receiving interest returns from lending. Taking a stake in a venture made it merchant banking.")(emphasis in original).

[290] 12 U.S.C. §1843(k)(4)(H)(i); 12 C.F.R. §225.170(d).

[291] 12 U.S.C. §1843(k)(4)(H)(ii); 12 C.F.R. §225.170(b).

[292] 12 U.S.C. §1843(k)(4)(H)(ii); 12 C.F.R. §225.170(f). A bank can also use a private equity fund that meets certain requirements to make the merchant banking investment. 12 C.F.R. §225.173.

[293] 12 U.S.C. §1843(k)(4)(H)(iii); 12 C.F.R. §225.172(a).

[294] 12 C.F.R. §225.172(b)(1).

- the financial holding company generally must not "routinely manage or operate" the company in which it has made the investment.[295]

Financial holding companies can make qualifying investments as the principal or on behalf of clients.[296] And, in contrast to the complementary powers provision, financial holding companies generally do not have to obtain prior approval by the Federal Reserve before making a merchant banking investment.[297]

Investment Gains Versus Operational Revenues. The Merchant Banking Rule does not expressly limit the scope of investments that meet the above criteria. The preamble to the Rule took the position, however, that the merchant banking authority was not intended to mix banking and commerce, but to allow financial holding companies to make purely financial investments. It states that, to "preserv[e] the financial nature" of the merchant banking investment and "maintai[n] the separation of banking and commerce," the principal purpose of the investment must be to make a profit for the financial holding company from the resale or disposition of its ownership stake and not from the operational revenues derived from running the nonfinancial business.[298]

According to the Congressional Research Service, the Gramm-Leach-Bliley Act effectively "allows [financial holding companies] into the high-risk, high-reward private equity market."[299] Another expert has described the Gramm-Leach-Bliley merchant banking authority as intended to enable banks to compete with securities firms and venture capital funds in investing in start-up companies.[300]

Routine Management. One key set of issues affecting merchant banking activities under the Gramm-Leach-Bliley Act involves the extent to which a financial holding company may exercise control over a business acquired as a merchant banking investment. Those acquired businesses are referred to in the Merchant Banking Rule as "portfolio companies," since they reside within the investment portfolio of the financial holding company.

The Gramm-Leach-Bliley Act states that a financial holding company may not "routinely manage or operate" a portfolio company. Nevertheless, financial holding companies have long sought to exercise varied degrees of control over their portfolio companies. Examples include requiring the portfolio company to first seek the financial holding company's approval before

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[295] 12 U.S.C. §1843(k)(4)(H)(iv); 12 C.F.R. §225.171(a) and (b)(c).
[296] 12 U.S.C. §1843(k)(4)(H); 12 C.F.R. §225.170(a).
[297] See 12 C.F.R. §225.174(a). However, prior approval may be needed if the proposed investment would cause the aggregate carrying value of all of its merchant banking investments to exceed the 5% cap.
[298] Merchant Banking Rule, 66 Fed. Reg. at 8469 (1/31/2001).
[299] "Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act," Congressional Research Service, No. RS21134 (10/22/2004), at 1.
[300] See, e.g., Omarova Testimony, at 3; The Merchants of Wall Street, at 281.

issuing securities, declaring dividends, or taking other actions deemed "outside the ordinary course of business."[301]

The extent of control that can be appropriately exercised by a financial holding company over a portfolio company remains unclear. Generally speaking, from 1999 to 2009, the Federal Reserve permitted financial holding companies to place a significant number of controls over a portfolio company related to the governance and funding of the company, without running afoul of the limitation that the financial holding company may not "routinely manage or operate" that company.[302] More recently, as explained below, the Federal Reserve has begun to take a more restrictive approach.

Currently, the extent of control that a financial holding company may appropriately exercise over a portfolio company is not spelled out in a rule, but is instead set forth largely in a 2001 letter from the Federal Reserve's then-General Counsel to Credit Suisse First Boston.[303] Some of guidance provided in that letter relates to the overall structure and funding of the portfolio company. For example, the letter indicated that a bank engaged in merchant banking may restrict the ability of a portfolio company to issue debt or equity securities,[304] redeem securities,[305] or amend the terms of securities.[306] The letter also indicated the bank could require the portfolio company to obtain prior approval by the financial holding company before declaring dividends "outside the ordinary course of business."[307] Other types of control delve more deeply into the portfolio company's business operations. For example, the Federal Reserve letter indicated that a bank may place restrictions on a portfolio company's ability to hire or fire executives,[308] "[e]nte[r] into a contractual arrangement (including a property lease or consulting agreement) that imposes significant financial obligations on the portfolio company,"[309] sell significant assets,[310] adopt or modify a budget for compensation,[311] "[c]reate, incur, assume, guarantee, refinance or prepay any indebtedness" outside the ordinary course of business,[312] or "[m]ake, or commit to make, any capital expenditure" outside the ordinary course of business.[313]

By allowing financial holding companies engaged in merchant banking to impose those types of restrictions on their portfolio companies, the Federal Reserve signaled that the financial holding companies could exercise significant control over their portfolio companies, so long as the controls related to activities "outside of the ordinary course of business." More recently, the

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[301] See, e.g., 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 599 [sealed exhibit] (outlining several types of covenants imposed by a financial holding company that restrict the financing or operations of a portfolio company).
[302] Id.
[303] Id.
[304] Id. at 596.
[305] Id.
[306] Id. at 597.
[307] Id. at 595.
[308] Id. at 598.
[309] Id.
[310] Id.
[311] Id.
[312] 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 597 [sealed exhibit].
[313] Id.

Federal Reserve has begun to reject financial holding company reliance on merchant banking authority to justify certain commodity activities when confronted by evidence that the activities were conducted by portfolio companies whose day-to-day operations were subject to the control of the financial holding company.

One example involves JPMorgan which, as part of a larger acquisition in 2010, acquired ownership of Henry Bath & Sons, a company that owns a global network of metals warehouses. JPMorgan applied to operate the business as a complementary activity.[314] The Federal Reserve denied the application.[315] JPMorgan then sought to hold the asset under its merchant banking authority.[316] In 2013, the Federal Reserve informed the bank that its merchant banking authority did not cover the Henry Bath acquisition, and that the bank would have to divest the holding,[317] which JPMorgan has since done.[318] Although it did not provide a written explanation of its reasoning for rejecting JPMorgan's reliance on its merchant banking authority, the Federal Reserve told the Subcommittee[319] that it had based its decision on two factors: (1) JPMorgan's active integration of the warehouse services into its other commodity activities and routine advertisement of the warehouse services to its clients; and (2) JPMorgan's dominant use of the warehouses, citing information provided by JPMorgan that about 75% of the commodities stored in the Henry Bath warehouses belonged to JPMorgan or a JPMorgan client.[320] JPMorgan told the Subcommittee that in addition to those reasons, the Federal Reserve had communicated its view that the warehouses were "not a passive investment" being held by JPMorgan.[321]

In another instance, the Federal Reserve has pressed JPMorgan to sell three power plants in which it owns 100% of the shares and is currently holding under its merchant banking authority.[322] JPMorgan originally acquired the power plants as part of larger acquisitions related to Bear Stearns in 2008 and RBS Sempra in 2010.[323] JPMorgan first approached the Federal Reserve about holding all three power plants under the Gramm-Leach-Bliley

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[314] See 6/8/2011 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956." (hereinafter "2011 Notice to the Board") FRB-PSI-300977 - 1052, at 1001 (JPMorgan application to hold Henry Bath metals storage facility as complementary activity).

[315] See 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team, (hereinafter "2012 Summary Report"), FRB-PSI-200477 - 510, at 505 [sealed exhibit]; Subcommittee briefing by JPMorgan (4/23/2014)(stating that the Federal Reserve rejected the complementary request related to Henry Bath during a telephone call and never provided a written explanation).

[316] See undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582; Subcommittee briefing by the Federal Reserve (11/27/2013).

[317] 2012 Summary Report, at 505; undated but likely 2013 "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 300 [sealed exhibits].

[318] JPMorgan sold Henry Bath and its warehouses to the Mercuria Group, a commodities and energy company based in Switzerland in 2014. Subcommittee briefing by Mercuria (9/12/2014).

[319] Subcommittee briefing by the Federal Reserve (11/27/2013).

[320] See 2011 Notice to the Board, FRB-PSI-300977 - 1052, at 1001.

[321] Subcommittee briefing by JPMorgan (4/23/2014).

[322] For more information about the power plants, see discussion of JPMorgan's involvement with electricity, below.

[323] See 5/26/2011 "Summary of outstanding legal/commodities issues as of March 2011," prepared by JP Morgan, FRB-PSI-304601 - 604, at 602. For more information about these power plants, see discussion of JPMorgan's involvement with electricity, below.

complementary authority.[324] After the Federal Reserve staff indicated that complementary authority did not include direct ownership of power plants, the bank invoked its merchant banking authority to continue its ownership stake in the power plants.[325] While the Federal Reserve continued to press the bank to sell the power plants, it did not explicitly disallow JPMorgan's reliance on its merchant banking authority to own them. As of October 2014, JPMorgan was attempting to sell all three.[326]

These and other examples of commodity-related merchant banking activities discussed below indicate that financial holding companies still do not have clear guidance on when it is appropriate to rely on merchant banking authority to own commodity-related businesses, nor are they clear about what controls may be asserted over their portfolio companies.

Still another issue raised in an internal Federal Reserve report is "the extent to which banks can engage in commercial/physical commodity activities breaches the separation of banking and commerce and places industrial activities within the federal safety net."[327] In other words, merchant banking losses incurred by banks and their holding companies are effectively being subsidized by the government and could end up being subsidized by taxpayers through Federal Reserve loans, FDIC insurance, or other types of federally-financed assistance. Despite identifying this problem, it is unclear what steps the Federal Reserve has taken to address it.

Growth in Merchant Banking Activities. Since 2001, under the auspices of the Gramm-Leach-Bliley Act, the volume and nature of "merchant banking" activities at financial holding companies, including physical commodity activities, have continued to expand.

According to the Congressional Research Service (CRS), from 2000 to 2013, financial holding companies have increased their merchant banking holdings from $9.5 billion to $46.2 billion, a fivefold increase.[328] The following charts, prepared with data gathered by CRS at the Subcommittee's request, show a steady growth in merchant banking activities over the last ten years, with twice as many foreign banks as domestic banks participating in merchant banking activity.[329]

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[324] See 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304602 - 604, at 602 [sealed exhibit].

[325] Id. Three months later, energy traders at JPMorgan initiated a scheme to manipulate energy prices in California and the Midwest, using some of the power plants acquired from Bear Stearns. The bank ultimately paid $410 million to settle charges by the Federal Energy Regulatory Commission (FERC) that it had gained $125 million in unjust profits at the expense of businesses and families who used power in those regions. 7/30/2013 FERC press release, "JP Morgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers," http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VFlUkvnF9u0.

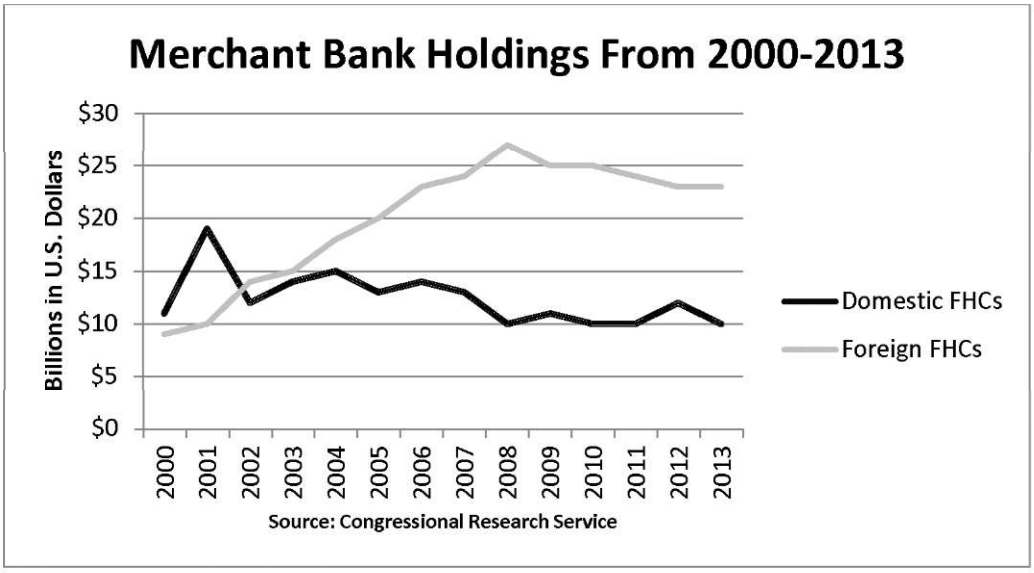
[326] For more information about the current status of these power plants, see discussion of JPMorgan's involvement with electricity, below.

[327] 2012 Summary Report, FRB-PSI-200477 - 510, at 482.

[328] 12/20/2013 "Merchant Banking Assets of Financial Holding Companies," memorandum by CRS, at 5, Tables 1 and 2 (using data provided by the Federal Reserve).

[329] Id.

Number and Dollar Value of Merchant Banking Assets of Financial Holding Companies, 2000-2013			
Number of Financial Holding Companies			
	Domestic	Foreign	
Year			**Assets Reported** (in U.S. billions)
2000	11	9	$9.5
2001	19	10	$8.3
2002	12	14	$9.1
2003	14	15	$10.7
2004	15	18	$12.0
2005	13	20	$15.50
2006	14	23	$19.90
2007	13	24	$27.10
2008	10	27	$22.60
2009	11	25	$34.00
2010	10	25	$54.00
2011	10	24	$48.50
2012	12	23	$49.40
2013	10	23	$46.20
Source: Congressional Research Service			



Because the Federal Reserve does not require financial holding companies to report with specificity on their merchant banking activities, neither the Federal Reserve nor CRS was able to indicate what portion of the financial holding companies' growing merchant banking assets was tied to commodities versus other types of businesses. It is also unclear the extent to which the reported data includes all merchant banking activities undertaken by financial holding

companies. When the Subcommittee reviewed the annual reports that the Federal Reserve requires financial holding companies to file on their merchant banking activities, the reports contained only aggregate data on such matters as the acquisition costs, unrealized gains, carrying values, and publicly quoted values of the merchant banking investments, but no list of individual projects.[330] The lack of specific information meant the Subcommittee could not determine whether the data included all of an institution's commodities-related merchant banking activities. The lack of data also makes it difficult for regulators or others to monitor the extent to which financial holding companies are accurately disclosing their merchant banking investments and complying with the requirements for those activities.

Case Studies. Each of the banks examined by the Subcommittee relied on their merchant banking authority to conduct at least some commodity activities that might otherwise be unallowable under the law. Goldman Sachs, for example, cited merchant banking authority as the legal basis for its ownership of Metro International's global network of warehouses, as well as its acquisition of companies that own multiple coal mines and related infrastructure in Colombia.[331] As explained above, JPMorgan cited merchant banking authority for its ownership of three power plants and attempted to use that authority for the Henry Bath network of warehouses.[332] Morgan Stanley cited reliance on merchant banking authority for its acquisition of Southern Star, a natural gas pipeline company, discussed further below.[333]

Each of the banks conducted their commodity-related merchant banking activities both within and outside of their commodities divisions. Morgan Stanley, for example, engaged in merchant banking investments involving natural gas, not only through its commodities division, but also through the Morgan Stanley Infrastructure Partnership and Morgan Stanley Global Private Equity Partnership, both of which operate through its Investment Division.[334] Goldman made merchant banking investments through its commodities group as well as a "Merchant Banking Division" that was completely outside of the commodities group.[335] Similarly, JPMorgan made merchant banking investments through a "Global Real Assets" section of its

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[330] See 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12," submitted to the Federal Reserve by JPMorgan, FRB-PSI-800005 - 008; Morgan Stanley, FRB-PSI-800009 - 012; and Goldman, FRB-PSI-800013 - 016.

[331] See 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 (listing Metro and CNR as merchant banking investments). For more information about these merchant banking activities, see below. Goldman has also asserted that its investment in Colombian mines was authorized pursuant to the Gramm-Leach-Bliley "grandfather" authority. See Report of Changes in Organizational Structure, FR-Y-10, Goldman Sachs Group, Inc. (4/14/2010), GSPSICOMMODS00046301 - 317 (indicating its coal mine investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations").

[332] See 2012 Summary Report, FRB-PSI-200477-510, at 505; 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304602 - 604, at 602 [sealed exhibit].

[333] Subcommittee briefing by Morgan Stanley (9/8/2014); Morgan Stanley Investment Management portfolio list, Morgan Stanley website, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html (including Triana Energy, a natural gas exploration and production company; Trinity, a carbon dioxide pipeline company; and Sterling Energy, a natural gas gathering, processing and marketing company).

[334] Subcommittee briefing by Morgan Stanley (9/8/2014); discussion of Morgan Stanley's merchant banking activities in that financial holding company's overview, below.

[335] See, e.g., undated organizational chart prepared by Goldman for the Subcommittee, PSI-Goldman-10-000001 - 002.

Asset Management business segment.[336] The evidence indicated that commodities-related merchant banking investments were being made by multiple, unrelated units throughout each financial holding company.

Ongoing merchant banking issues at the financial holding companies include whether their physical commodity activities qualify as merchant banking investments or improperly mix banking with commerce; and ensuring that financial holding companies' merchant banking activities do not undermine the safety and soundness of the firms.

(5) Narrowly Enforcing Prudential Limits

Still another key regulatory issue has to do with enforcing the statutory, regulatory, and company-specific prudential limits created to restrict the overall size of a bank's physical commodity activities and reduce the related risks. The Gramm-Leach-Bliley Act, its implementing regulations, and the grants of complementary authority issued by the Federal Reserve all contain prudential limits on the volume of a holding company's physical commodity activities. However, those prudential limits, which generally seek to place a cap on the investments as a percentage of the firm's assets or capital, have implementation and enforcement issues that have not been resolved.

The only statutory limit is in the Gramm-Leach-Bliley Act's grandfather clause which provides that the dollar value of the physical commodity activities engaged in by the financial holding company's subsidiaries under the clause cannot exceed 5% of the subsidiaries' "aggregate consolidated assets" or 5% of the financial holding company parent's "total consolidated assets," unless the Federal Reserve increases the cap.[337]

The Gramm-Leach-Bliley Act does not place any statutory limit on activities that may be conducted under its complementary authority. Nevertheless, the Federal Reserve has conditioned its approval of complementary activities on a commitment by the relevant financial holding company that the dollar value of its physical commodity holdings will not exceed 5% of the financial holding company's consolidated Tier 1 capital.[338] The Federal Reserve also initially restricted merchant banking investments to generally no more than 30% of financial holding company's Tier 1 capital, but removed that cap in 2002.[339]

The two 5% limits on grandfathered and complementary activities apply to different attributes (assets versus capital) and are applied and enforced separately.[340] Both limits raise

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[336] See, e.g., 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004.

[337] See Section 103(a) of the Gramm-Leach-Bliley Act, P.L. 106-102, codified at 12 U.S.C. §1811.

[338] See, e.g., 11/18/2005 "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," prepared by Federal Reserve, http://www.federalreserve.gov/boarddocs/press/orders/2005/20051118/attachment.pdf.

[339] See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); 10/22/2004 "Merchant Banking: Mixing Banking and Commerce Under the Gramm-Leach-Bliley Act," prepared by the Congressional Research Service, at 4; 67 Federal Register 3786 (2002). The Federal Reserve terminated the size limit after imposing specific capital requirements for merchant banking investments.

[340] Federal Reserve briefing of the Subcommittee (12/13/2013).

multiple enforcement concerns. One issue is whether financial holding companies are excluding major categories of assets.[341] For example, a report prepared by the Federal Reserve staff found that financial holding companies included the dollar value of leases on power plants when calculating covered assets for purposes of the 5% Tier 1 capital cap, but excluded leases on infrastructure, such as oil and gas storage facilities.[342] Another tactic used by one financial holding company was to exclude the physical commodities held by its bank when calculating the financial holding company's physical commodity assets subject to the Federal Reserve's 5% complementary limit.[343]

A second concern involves how the financial holding companies are valuing their physical commodity assets for purposes of calculating the limits. During its recent review of bank involvement with physical commodities, the Federal Reserve uncovered and disallowed several valuation practices, such as a dubious netting of income from tolling agreements.[344]

Still another issue is whether, given the enormous size of the financial holding companies involved with physical commodities, the 5% limits provide sufficient protection from financial risk for both the firms and the commodities markets.[345] As of March 2014, the six largest bank holding companies reported aggregated assets of nearly $10 trillion.[346] The enormous value of their assets means that even a rigorous 5% Tier 1 capital limit – as opposed to the current porous one – would permit multi-billion-dollar physical commodity activities which, in the event of losses, could impact both the financial institutions and the markets. In addition, those limits fail to prevent massive inflows of capital into the relatively small commodities markets, under the control of a relatively small number of financial holding companies, raising concerns about undue economic concentration and market manipulation.[347]

Since enactment of the Gramm-Leach-Bliley Act in 1999, a handful of financial holding companies have significantly expanded their involvement with physical commodities. They have done so despite prudential limits designed to constrain that growth and the attendant risks. Loopholes and inappropriate interpretations have rendered the limits largely ineffective and in need of clarification and renewal.

B. Reviewing Bank Involvement with Physical Commodities, 2009-2013

After the financial crisis of 2008, the Federal Reserve, as well as other U.S. bank regulators, undertook new efforts to identify hidden or under-appreciated risks in the U.S. banking system. As part of that effort, the Federal Reserve identified financial holding company involvement with physical commodities as creating risks requiring a special review. The

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[341] See discussion of JPMorgan involvement with size limits, below.
[342] 2012 Summary Report, FRB-PSI-200477 - 510, at 506.
[343] Id. For more information, see discussion of JPMorgan involvement with size limits, below.
[344] For more information, see discussion of JPMorgan involvement with size limits, below.
[345] See, e.g., Rosner Testimony, at 6.
[346] See "Holding Companies with Assets Greater Than $10 Billion," (as of 6/30/2014), Federal Reserve System, National Information Center, http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx (reflecting the aggregated assets of the six largest U.S. banks at $9.8 trillion).
[347] In evaluating requests for complementary authority, the Federal Reserve is statutorily required to consider "undue concentration of resources." 12 U.S.C. §1843(j)(2)(A).

resulting special review, which spanned three years, not only surveyed the financial holding companies' physical commodity activities, but also identified numerous risks associated with those activities, including operational risks, inadequate risk management, insufficient capital, and ineffective regulatory safeguards. It offered multiple recommendations to reduce financial holding company involvement with physical commodities and ameliorate the associated risks.

(1) Initiating the Special Physical Commodities Review

After the 2008 financial crisis disclosed vulnerabilities in federal oversight of the largest banks, the Federal Reserve revamped its risk governance system. In 2009, the Federal Reserve replaced its Large Financial Institutions section with the Large Institution Supervision Coordinating Committee (LISCC), headed by senior Federal Reserve personnel.[348]

The Inspector General for the Federal Reserve System has explained that LISCC was created to:

> "provide strategic and policy direction for supervisory activities across the Federal Reserve System, improve the consistency and quality of supervision, incorporate systemic risk considerations, and monitor the execution of the resulting supervisory program."[349]

In addition to supervisory personnel, LISCC was staffed with economists, quantitative analysts, payment system specialists, and other experts to enable it to take a multidisciplinary approach to identifying and analyzing risks affecting systemically important financial institutions (SIFIs) and the global banking system.[350]

In 2009, LISCC established an Operating Committee composed of senior regulatory officials to develop prudential standards for and oversee the largest SIFIs within its jurisdiction, generally those whose assets exceeded $50 billion.[351] To carry out its oversight obligations, the Operating Committee established several subgroups, including a Risk Secretariat charged with identifying key risks affecting the SIFIs, setting priorities for investigating those risks, and providing the resources needed to conduct the risk investigations.[352]

In 2009, after weighing investigative priorities and its limited resources, the Risk Secretariat identified bank involvement with physical commodities as a major emerging risk and

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[348] 5/23/2012 Federal Reserve Office of Inspector General letter, at 3, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf.
[349] Id. at 4.
[350] Subcommittee briefing by the Federal Reserve (12/13/2013).
[351] 5/23/2012 Federal Reserve Office of Inspector General letter, at 3, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf. In 2012, those SIFIs included eight domestic and four foreign-owned firms, the majority of which were financial holding companies of major banks. Id.
[352] Subcommittee briefing by the Federal Reserve (12/13/2013).. Other subgroups created by the Operating Committee include the Capital Performance Secretariat, the Data Team, Products and Processes, the Tactical Action Group, and Vetting. 5/23/2012 Federal Reserve Office of Inspector General letter, at 4, http://oig.federalreserve.gov/reports/BOG_enhanced_prudential_standards_progress_May2012.pdf.

approved a special review of those activities.[353] Dan Sullivan, then Assistant Vice President and Department Head of Market Risk at the Federal Reserve Bank of New York (FRBNY), submitted the proposal for a comprehensive review of physical commodity activities, explained why it should be approved on a priority basis, and agreed to "sponsor" the investigative effort, if approved.[354]

In early 2010, the Risk Secretariat agreed to provide sufficient resources for an in-depth, multi-firm, multi-year review of the physical commodity activities at financial holding companies. The special review was designed to accomplish the following objectives:

- "Deepen our understanding of the scope of commodity trading at SIFIs and assess the inherent risks, the quality of risk reporting and controls, and capital methodologies with an emphasis on the physical industrial commodity activities. Lead efforts to develop a complete assessment of risk in commodity related industrial activities across risk disciplines.
- Assess the broader implications of SIFIs in the commodity markets along with non-financial traditional firms and the impact on markets.
- Provide product knowledge expertise and analysis in support for NY Banking Applications and the Legal divisions in NY and the Board on physical commodity applications (under complementary authority)."[355]

(2) Conducting the Special Review

After approving the special review, LISCC's Risk Secretariat directed formation of a Commodities Team to perform the work. To gather and analyze information, the Commodities Team drew from past and ongoing commodities examinations, and conducted its own investigative work. In October 2012, the team concluded the special review with a private presentation to Federal Reserve supervisors summarizing its overall findings and recommendations.[356] The Commodities Team then ceased its active investigation but continued in existence for nearly a year, assisting Federal Reserve personnel with a variety of physical commodity issues until dissolving in 2013.[357]

Creating the Commodities Team. In the first quarter of 2010, the Risk Secretariat directed formation of the Commodities Team to conduct the special review.[358] To ensure that the team had the necessary expertise in physical commodities, risk management, capital

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[353] Subcommittee briefing by the Federal Reserve (12/13/2013). The Risk Secretariat has also approved other horizontal, multi-firm investigations including those related to capital stress testing and capital adequacy. See, e.g., "Implementing Wall Street Reform: Enhancing Bank Supervision and Reducing Systemic Risk," hearing before the U.S. Senate Committee on Banking, Housing, and Urban Affairs, S. Hrg. 112-714 (6/6/2012), at 47, prepared statement of Daniel K. Tarullo, Federal Reserve Governor, http://www.gpo.gov/fdsys/pkg/CHRG-112shrg78813/html/CHRG-112shrg78813.htm.

[354] Subcommittee briefing by the Federal Reserve (12/13/2013). See also 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 467 [sealed exhibit].

[355] See 2011 FRBNY Commodities Team Work Plan, FRB-PSI-200455, at 468.

[356] See 2012 Summary Report, FRB-PSI-200477 - 510 [sealed exhibit].

[357] Subcommittee briefing by the Federal Reserve (12/13/2013).

[358] Id.

planning, insurance, and related issues, personnel for the Commodities Team were drawn from Federal Reserve supervisory ranks and new hires from industry. The Commodities Team had about a half dozen members at any one time.[359] From the team's inception, the Project Manager was Wai Wong, a senior Federal Reserve regulator with expertise in capital markets risk.[360]

The team was based in New York, and was housed and supported by the Federal Reserve Bank of New York (FRBNY). It also worked closely with and received assistance from the Federal Reserve examination teams assigned to the institutions being examined, as well as Federal Reserve personnel in Washington, D.C., Richmond, and New York.[361] From 2010 to 2012, the Commodities Team members spent the bulk of their time conducting the commodities review.[362]

Developing a Work Plan. To accomplish their work, the Commodities Team drew on a "discovery review" that had been conducted prior to the team's formation to justify the larger investigation,[363] as well as earlier targeted examinations.[364] Those past efforts helped the team gain a greater understanding of the commodities, products, operations, and risks involved in the banks' physical commodity activities.

In 2011, the Commodities Team drew up its own work plan.[365] One part of the 2011 Work Plan, entitled: "Why is this a priority," gave five key reasons for the special review of financial holding company involvement with physical commodities:

- "Key business targeted for expansion and growth

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[359] Id. In addition to Mssrs. Sullivan and Wong, over time other team members and persons associated with the Commodities Team included Xiaobin Cai, Eric Caban, Philip Etherton, Nathan Fujiki, Irina Gvozd, David Gross, Lyon Hardgrave, Sarah Jackson, and Michael Nelson. See, e.g., 2012 Summary Report, at FRB-PSI-200477 [sealed exhibit].

[360] Id. See also 2011 FRBNY Commodities Team Work Plan, at FRB-PSI-200467. In May 2013, shortly before the team's dissolution, he was replaced by Nathan Fujiki, another Commodities Team member. Subcommittee briefing by the Federal Reserve (12/13/2013).

[361] Id.

[362] Id.

[363] See undated, but likely 2009 "Scope Discovery Review Memo[:] Goldman Sachs Group Commodities," prepared by Federal Reserve Bank New York examiners, FRB-PSI-200511 - 515 [sealed exhibit]; 4/8/2010 "Discovery Review Product Memo[:] Goldman Sachs Global Commodities," prepared by the Federal Reserve Commodities Team, FRB-PSI-303698 - 767 [sealed exhibit]; 5/11/2010 "Goldman Sachs Commodities[:] Discovery Review Product Memo Vetting Presentation," prepared by Federal Reserve Commodities Team, FRB-PSI-200586-599 [sealed exhibit].

[364] See, e.g., 5/11/2009 "Federal Reserve Bank of New York Product Memo Goldman Sachs Group (GS) Market Risk Amendment," prepared by FRBNY examiners, FRB-PSI-304941 - 959, at 942 (identifying concerns with VAR modeling used for commodities) [sealed exhibit]; 3/20/2009 letter from Federal Reserve to Morgan Stanley, FRB-PSI-304613 – 672, at 613 (announcing "target review of Morgan Stanley's commodities business for six weeks" at its offices in New York); 10/5/2009 letter from Federal Reserve to Morgan Stanley, FRB-PSI-304620 - 626, at 620 (announcing "target review of Morgan Stanley's commodities business for approximately four weeks" at its offices in London); 10/19/2009 "Scope Memorandum[:] Morgan Stanley Euro Commodities, Control Validation Target Exam," prepared by FRBNY examiners, FRB-PSI-304665 - 672 [sealed exhibit]; 5/24/2010 letter from Federal Reserve to Morgan Stanley, "Global Oil Trading Review beginning June 22, 2010," FRB-PSI-304673 - 677, at 673 (announcing "a control validation review of Morgan Stanley's global oil trading desks for approximately six weeks" at its offices in New York).

[365] See 2011 Work Plan, FRB-PSI-200455, at 472; and 2012 Summary Report, FRB-PSI-200477, at 480.

- Size and complexity of the business
- Weaknesses in Risk Management and Valuation
- Raises issues regarding Commerce vs. Banking
- Capital measures low relative to non-banking players"[366]

On the first two points, the 2011 Work Plan noted that "SIFIs exposures are growing and cover a broad range of commodity physical industrial activities."[367] It also observed that several large financial institutions:

> "continue to expand in the physical commodities markets, with an emphasis on leasing and owning assets such as power plants, oil and natural gas storage facilities, and transportation assets (e.g. oil tankers or product pipelines). MS has $13.1 billion in commodity assets, and Goldman Sachs as $26 billion."[368]

On the third point, the 2011 Work Plan noted that "the Management framework used by banks for physical assets is the same framework used for financial derivatives products,"[369] and that "most risk measures such as [Value-at-Risk] do not capture many risk components to physical commodities."[370] These concerns about risk management weaknesses built upon an earlier Federal Reserve memorandum finding significant "limitations with VaR calculations due to the large number of proxies used, unstable correlations and issues with seasonality and manual processes."[371]

On the fourth point, the Commodities Team was concerned that, by buying, selling and maintaining ownership interests in physical commodities, banks appeared to be engaging in commercial activities in direct competition with non-banking firms, contrary to longstanding principles against mixing banking with commerce.[372]

As to the fifth and final point, the Commodities Team was concerned that financial firms were inadequately prepared for possible losses associated with their physical commodity activities. In particular, preliminary research had shown that commercial firms engaged in the same activities retained capital in amounts several times greater than those of banks engaged in them, raising concerns that banks were not fully protected from financial loss in the case of an operational failure or catastrophic event.[373]

Conducting Examinations. Over the next two years, the Commodities Team conducted an extensive review of physical commodity activities at ten SIFIs.[374] Goldman Sachs, JPMorgan, and Morgan Stanley received the most attention due to their having the most

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[366] 2011 Work Plan, at FRB-PSI-200471.
[367] Id. at 464.
[368] Id. at 465 (emphasis omitted).
[369] Id. at 466.
[370] Id. at 465.
[371] Undated "Update on Trading in Commodities," memorandum prepared by the Federal Reserve, FRB-PSI-200419 - 423, at 419 [sealed exhibit].
[372] Subcommittee briefing by Federal Reserve (12/13/2013).
[373] Id.
[374] Id.; 2012 Summary Report, at FRB-PSI-200480 [sealed exhibit].

extensive commodity holdings and activities. The other seven firms, Bank of America, Barclays Capital, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, and GE Capital, received relatively less scrutiny because they had less extensive physical commodity activities.

To conduct the review, the Commodities Team used a mix of targeted and routine examinations and continuous monitoring reviews to collect and analyze needed information.[375] The Team eventually conducted targeted examinations exploring specific commodities issues at four financial holding companies, JPMorgan, Morgan Stanley, Bank of America, and Barclays.[376] It collected additional information about physical commodity activities at Goldman Sachs, Citigroup, GE Capital, and Deutsche Bank using routine examinations and ongoing, continuous monitoring reviews.[377]

Issuing Reports. In connection with its work, the Commodities Team produced numerous interim examination reports, memoranda, and analyses documenting various aspects of financial holding company involvement with physical commodities. These internal reports were made available to Federal Reserve personnel, but not to the public.

A number of the reports examined the banks selected as case studies for this Report. For example, a Commodities Team analysis of JPMorgan reported that its "Global Commodities Group is a strategic priority for the firm, and includes financial and physical capabilities across oil, gas, power, metals, agriculturals, plastics, environmental markets, and weather."[378] The Commodities Team wrote: "Since 2006 the firm [JPMorgan] has significantly grown its physical activities, largely through acquisition, and has joined the top tier (along with [Morgan Stanley] and [Goldman Sachs]) among banks in commodities." A 2009 analysis found that:

> "[Goldman Sachs] is one of the largest players in the commodities market and the business has been a material driver of revenue for the firm. … Goldman's commodities business is active in the physical markets, in terms of trading, transporting, and storing physical commodities as well as owning power generation and other physical assets."[379]

A 2011 targeted examination of Morgan Stanley focused on its power plant activities in Europe, the Middle East, and Africa (EMEA), and provided in-depth reviews of its insurance arrangements, operational risk management, regulatory compliance procedures, vendor management, and internal audit coverage.[380] Among other problems, the examination found that Morgan Stanley's operational risk capital calculations improperly excluded key activities, and that Morgan Stanley had valuation issues, an incomplete database of operational and environmental incidents, poor vendor management, and insufficient insurance.

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[375] Id.
[376] Id.
[377] Id.
[378] Undated but likely 2013 "Commodities Focused Regulatory Work at JPM," prepared by FRBNY Commodities Team, FRB-PSI-300299 - 302, at 300 [sealed exhibit].
[379] Undated but likely 2009 "Scope Discovery Review Memo[:] Goldman Sachs Group Commodities," prepared by FRBNY examiners, FRB-PSI-200511 - 515 [sealed exhibit].
[380] See 10/30/2011 "Supervisory Assessment – Multiple Exams Product Memo[:] Morgan Stanley Commodities," prepared by FRBNY examiners, FRB-PSI-304747 - 797 [sealed exhibit].

Still another set of reports, prepared by the Commodities Team in connection with an analysis of the Gramm-Leach-Bliley grandfather clause, provided detailed information about the commodity activities at Goldman Sachs and Morgan Stanley prior to 1997 and more recently.[381]

Ultimately, in October 2012, the Commodities Team produced a Summary Report highlighting key supervisory concerns and offering recommendations to reduce the attendant risks.[382] This report was presented to Federal Reserve senior management, but not to any Federal Reserve Governors or the public.[383]

(3) Documenting Extensive, High Risk Commodity Activities

The written materials produced by the Commodities Team painted a detailed picture of the rapidly expanding, complex physical commodity activities underway at major bank holding companies from the mid-2000s to 2012. The special review documented an unprecedented level of bank involvement in the energy, metal, and agricultural commodity markets, as well as a wide range of troubling risks and inadequate risk management practices.

(a) Summarizing Banks' Physical Commodities Activities

In its 2012 report summarizing the special review, the Commodities Team concluded that the ten financial holding companies it had examined had "significant footprints in physical commodity activities."[384] To provide an overview of the physical commodity activities involved, the report provided a two-page list of representative bank activities in oil and gas storage and transport, electrical power generation, shipping, metal warehousing, and coal and uranium mining.

Oil and Gas. The 2012 Summary Report found that Morgan Stanley then held "operating leases on over 100 oil storage tank field[s] with 58 million barrels of storage capacity globally and 18 natural gas storage facilities in US and Europe."[385] It reported that JPMorgan had a "significant global oil storage portfolio (25 [million barrel] capacity) … along with 19 Natural Gas storage facilities on lease."[386] And it noted that Bank of America had "23 oil storage facilities and 54 natural gas facilities … leased for storage."[387]

Power Generation. The 2012 Summary Report found that JPMorgan had "14 tolling agreements (operating lease[s] on power plants) of which one is for a power plant that generates 6% of the maximum total output of the California Electricity grid, and potentially up to 12% of

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[381] See, e.g., undated but likely 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by FRBNY. FRB-PSI-200428-454 [sealed exhibit]; 4/19/2011 "Commodities Activities at Goldman Sachs and Morgan Stanley[:] 4(o) permissibility analysis overlaid on GS and MS activities," prepared by Federal Reserve, FRB-PSI-200944 - 959 [sealed exhibit].
[382] 2012 Summary Report, at FRB-PSI-200477 - 510. [sealed exhibit]
[383] Subcommittee briefing by the Federal Reserve (10/8/2014).
[384] 2012 Summary Report, at FRB-PSI-200485 [sealed exhibit].
[385] Id.
[386] Id.
[387] Id.

average electricity demand."[388] It indicated that JPMorgan had also bought and sold over $1 billion worth of power plants over the prior three years. In addition, the 2012 Summary Report found that Morgan Stanley owned 6 domestic and international power plants; Bank of America could make contingent power purchases from several nuclear power plants; and Goldman Sachs had four tolling agreements and a wholly-owned subsidiary, Cogentrix, withownership interests in over 30 power plants.[389]

Shipping. The 2012 Summary Report found that Morgan Stanley had "over 100 ships under time charters or voyages for movement of oil product, and was ranked 9th globally in shipping oil distillates in 2009."[390] It also noted that Morgan Stanley was "[c]urrently growing its ability to ship Liquefied Natural Gas." In addition, the Summary Report observed that JPMorgan and Goldman Sachs had a "total of 20-25 ships under time charters or voyages transporting oil [and] Liquefied Natural Gas."[391]

Metals. The 2012 Summary Report found that Goldman Sachs owned "Metro Warehouse which controls 84 metal warehouse/storage facilities globally" and qualified as a London Metals Exchange storage provider.[392] It also reported that JPMorgan had acquired "Henry [B]ath metals warehouse (LME certified base metals warehousing/storage worldwide)," and that JPMorgan's "total base metal inventory was as high as $8 [billion]" during the first quarter of 2012.[393]

Coal. The 2012 Summary Report found that all of the financial holding companies reviewed conducted "physical coal trading involv[ing the] shipment of coals."[394] It also noted that Goldman Sachs had acquired a Colombian coal mine valued at $204 million, which had also included associated rail transportation for the coal.[395]

Uranium. The 2012 Summary Report also found that Goldman Sachs had conducted "a uranium trading business that engages in the trading of the underlying commodity."[396]

Altogether, the 2012 Summary Report showed how, in the space of one decade, large U.S. bank holding companies had developed and expanded multi-billion-dollar commodity activities involving energy, critical metals, and associated storage and transport functions vital to U.S. commerce and defense.

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[388] Id.
[389] Id.
[390] Id. at 486.
[391] Id.
[392] Id.
[393] Id.
[394] Id.
[395] Id.
[396] Id. While the assessment referred to trading "fully enriched uranium," Goldman told the Subcommittee that it has not traded any enriched uranium. Subcommittee briefing by Goldman Sachs (9/5/2014).

(b) Identifying Multiple Risks

In addition to describing the physical commodity activities underway at ten large financial holding companies, the special review conducted by the Commodities Team catalogued, investigated, and analyzed numerous risks and related issues of concern associated with those activities. Problems included multiple operational risks, weaknesses in risk management, weak valuation practices, market manipulation concerns, reputational risks, insufficient capital, and ineffective limits.

The Commodities Team observed that one of the central challenges facing financial holding companies engaging in physical commodities activities is that the risk management techniques applicable to the financial world may not translate well to the physical world. Mining coal, producing electric power, transporting and storing oil and gas, storing uranium, operating a natural gas compression facility, and owning gasoline stations are all complex businesses with multiple risks varying from the commonplace to unexpected disasters. Customers can dry up. Labor can go on strike. Equipment can break down. Inventories can be too high or too low. Vendors can cause problems. Prices may spike or fall. Regulations can change. Transportation can become difficult. There can be an environmental, health, or safety event. Some of these commercial operational risks may be small, while others may be catastrophic.

Rather than survey all of these types of operational risks, the Federal Reserve's review focused on the direct risks associated with the storage, transport, production, and supply of physical commodities. They included the risks associated with a catastrophic event, including costs not covered by insurance; market and valuation risks including valuation problems leading to insufficient capital or insurance; and reputational risks such as allegations of price manipulation or pressures to pay unanticipated costs associated with an affiliate.

Catastrophic Event Risks. One of the greatest challenges in the commodities business is dealing with the risk of a catastrophic event, such as an oil spill or gas explosion. Identifying and quantifying those event risks are difficult tasks.[397] In particular, a lack of data on infrequent events makes it extraordinarily difficult to predict with any accuracy whether, when, and to what degree they may occur.[398]

The 2012 Summary Report found that building risk models for "very infrequent, but high impact events is very much an art,"[399] and that financial holding companies had very different approaches to quantifying those risks.[400] According to the special review, for example, both

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[397] See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).

[398] These prediction challenges are not isolated to the financial world. For example, in the aftermath of the Challenger shuttle disaster, Nobel Laureate Richard Feynman famously challenged NASA's probability of total failure of a space shuttle mission, which was purportedly 1 in 100,000. While challenging the mathematical rigor of that determination, he noted that some engineers had numbers suggesting failure rates more along the lines of 1 in 200. "Personal observations on the reliability of the shuttle," Richard Feynman, (6/6/1986), http://science.ksc.nasa.gov/shuttle/missions/51-l/docs/rogers-commission/Appendix-F.txt.

[399] 2012 Summary Report, FRB-PSI-200493 [sealed exhibit].

[400] Id.

Morgan Stanley and JPMorgan assumed that the maximum dollar loss for a power plant that experienced a catastrophic event was simply the value of the facility itself, without adding in costs reflecting such factors as loss of life, property damage, or legal expenses.[401] The special review determined that Goldman Sachs had developed a power plant destruction loss model, but it, too, had an upper bound limited to the current value of its most valuable power plant. The special review noted that Bank of America had no total loss model for its commodity activities at all.[402]

In addition to upper bounds that were set too low, the special review found that financial holding company model assumptions tended to be "aggressive" and resulted in "lower capital levels than would be for a stand alone entity."[403] For example, the review found that JPMorgan had determined that an oil spill into water would cause the largest potential single loss to the firm of all of its physical commodities businesses, and estimated that the maximum oil spill loss would be $497 million.[404] According to the special review, JPMorgan then applied "diversification benefits" and other assumptions to reduce its estimated capital exposure from $497 million to about $50 million.[405] The final capital calculation was, thus, one tenth of the original loss estimate. In another case involving Bank of America, the special review found that its stand alone capital for its commodity activities was approximately $208 million, with no capital at all allocated for a catastrophic loss.[406]

The 2012 Summary Report summarized the problems with managing catastrophic risks as follows:

> "Modeling for the tail risk or maximum loss for a broad range of physical commodities activities such as power generation, transportation and refining are difficult to measure and potentially inadequately capitalized under current framework. Practices for measuring stress loss are highly disparate [a]cross firms. Use of traditional BHC [Bank Holding Company] financial risk measure processes and techniques do not appear to be appropriate for Physical Commodity Activities."[407]

In short, the report found that financial holding companies were not identifying or quantifying catastrophic event risks in a standard or appropriate way, and most were clearly underappreciating such risks.

Market and Valuation Risks. The Commodities Team found similar problems with how financial holding companies valued their physical commodities and associated facilities for purposes of calculating their market risk. Market risk is the "risk due to factors that affect the

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[401] Id.
[402] Id.
[403] Id..
[404] Id. at 494.
[405] Id. at 493. This $50 million figure stands in sharp contrast to the over $40 billion in losses suffered by BP as a result of the Deepwater Horizon oil spill. See 2013 "Annual Report and Form 20-F 2013," prepared by BP, BP website, http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf .
[406] 2012 Summary Report, at FRB-PSI-200493 [sealed exhibit].
[407] Id. at 481.

overall performance of the financial markets."[408] It depends upon accurate asset valuations, which are central to calculating appropriate levels of insurance and capital. The 2012 Summary Report determined that the financial holding companies were using a variety of valuation methods, many of which contained significant flaws.

The 2012 Summary Report found, for example, that the financial holding companies were using different valuation methods in different settings for the same physical commodity assets, leading to the use of one valuation method for the company's internal metrics, another for their capital calculations, and perhaps another for their public reporting. The report determined that the different valuation methods could lead to profit and loss figures that varied significantly from revenues reported to the public under Generally Accepted Accounting Principles (GAAP).[409] The 2012 Summary Report found that, in some cases, this variance exceeded $1 billion.[410]

The 2012 Summary Report provided an example involving oil cargoes. It found that, for its internal performance metrics, Morgan Stanley valued its oil cargos at the highest price available at any port in the world minus the transportation cost of getting it to its final destination.[411] By contrast, the report found that, under GAAP, the bank was required to value its oil cargos using spot market prices.[412] The Summary Report noted that JPMorgan took a more conservative approach, valuing its oil cargos at the lowest observed destination price for its internal performance metrics, and using the lower of cost or market prices for its financial reporting under GAAP.[413] These different approaches led to very different cargo values for purposes of calculating capital and market risk, with lower cargo values resulting in less capital.

Similarly, when looking at how the banks valued oil when held in storage, the 2012 Summary Report found very different approaches. It determined that Morgan Stanley used a basket of calendar spread options to calculate the value of its stored oil; JPMorgan used a model based on the intrinsic value of the highest calendar spread for the oil; and Bank of America used a Monte Carlo simulation of an option.[414] Again, the three approaches produced different dollar values, with different consequences for capital and market risk management calculations.

In a third analysis, the 2012 Summary Report found that the financial holding companies varied somewhat in how they valued physical equipment, such as power plants. It determined that most held the plants on their books as an investment at cost, and used tolling agreements to capture the ongoing economic value. Tolling agreements typically capture the value of the spread between a plant's output (electricity) and its fuel inputs (coal or gas). The 2012 Summary Report determined that, while this approach provided a liquid derivative representation of an illiquid, hard-to-value asset, this method of valuation also had weaknesses that would not be reflected in stress tests.[415] For example, depending upon how a tolling agreement is worded, a

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[408] 2014 "Market Risk," Investopedia website, http://www.investopedia.com/terms/m/marketrisk.asp.
[409] 2012 Summary Report, FRB-PSI-200501 - 502 [sealed exhibit].
[410] Id. at 495.
[411] Id.
[412] Id.
[413] Id.
[414] Id. at 496.
[415] Id. at 493, 496.

bank may have to make payments to buy output from a power plant that isn't producing any power, or have to buy all of the production of a facility whose output is no longer valuable. In addition, the derivatives-based valuation models might not accurately reflect the nature of the market risks and price variability associated with specific physical commodity activities.

Placing accurate values on power plants, tolling agreements, and lease arrangements are critical to financial holding companies setting adequate insurance and capital levels. The 2012 Summary Report warned, however, that the valuation techniques being used by financial holding companies for their physical commodity activities were not consistent, comprehensive, or reliable.

Reputational Risk. In addition to catastrophic, market, and valuation risks, the Commodities Team examined reputational risks associated with physical commodity activities. The 2012 Summary Report identified two types of reputational risks associated with physical commodities activities, those associated with allegations of price manipulation and those associated with being pressured to pay for an affiliate's losses.

The first type of reputation risk involved the risk of being accused of misusing physical commodity activities to engage in price manipulation:

> "Having access to physical markets gives the firms access to supply/demand information that is reportedly vital to running a profitable global commodities business. Many of these physical activities involve warehousing and storing commodity products, and therefore the control of the supply of certain commodities in specific geographic regions, which raises the potential for price manipulation issues."[416]

The report stated: "In the past few years, all the banks involved in these markets have been accused and/or charged of manipulating markets."[417]

The report's analysis indicated that financial holding companies conducting physical commodity activities opened themselves up to charges of being engaged in market or price manipulation. Banks that avoided physical commodity activities were less vulnerable to those types of allegations. The analysis also identified two different aspects of price manipulation allegations, accusations regarding misusing inside information to make profitable trades, and accusations regarding the improper manipulation of supplies to affect commodity prices.

Suspicions related to misuse of non-public information arise from the fact that financial holding companies conducting commodity trades are simultaneously privy to commodity decisions being made by numerous clients, some of which may be important market participants. In addition, financial holding companies operating warehouses, pipelines, or shipping businesses gain access to non-public information that can be used to make profitable trading decisions. While commodity laws traditionally have not barred the use of non-public information in the same way as securities laws, concerns about unfair trading advantages deepen when the trader is

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[416] Id. at 492.
[417] Id.

a large financial institution with access to non-public information about numerous clients as well as its own extensive commodity activities.

A related concern is when financial holding companies operate businesses that can directly affect market supplies at the same time they are trading commodity-related financial instruments on exchanges or over the counter. Cancelling warrants that lengthen a warehouse queue, causing congestion in electricity markets, or supplying copper to an exchange traded fund are actions that can and have elicited charges of market manipulation.[418]

In recent years, banks and their holding companies have settled allegations of price manipulation by paying substantial fines and legal fees. For example, in July 2013, JPMorgan paid $410 million to settle charges by the Federal Energy Regulatory Commission (FERC) that the bank had manipulated electricity markets in California and the Midwest, as further described below.[419] In January 2013, Deutsche Bank paid $1.6 million to settle FERC price manipulation charges that, in 2010, it had "engag[ed] in a scheme in which [the bank] entered into physical transactions to benefit its financial position," including by making physical electricity trades to offset losses in electricity-related financial instruments held by the bank.[420] Also in 2013, Barclays Bank contested charges by FERC imposing a $453 million civil penalty on the bank for "manipulating electric energy prices in California and other western markets between November 2006 and December 2008."[421] Banks have also been accused by regulators[422] and plaintiffs[423] of rigging metals markets as well.

The 2012 Summary Report warned: "Reputational risks can be significant with frequent occurrences and accusations of pricing manipulation."[424] What the Summary Report failed also to acknowledge is that price manipulation is not just a matter of reputational risk, but an increasing area of actual misconduct by bank holding companies leading to civil and criminal proceedings, violations of law, substantial fines, and enormous legal fees. The Summary Report contained little analysis and no recommendations on how regulators should oversee or manage the conflicts of interest inherent in a financial holding company that engages simultaneously in commodities trading and physical commodity activities like storing, transporting, or supplying commodities.

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[418] See, e.g., In re Deutsche Bank Energy Trading, LLC, FERC Case No. IN12-4-000, Order Approving Stipulation and Consent Agreement, (1/22/2013), 142 FERC at ¶ 61,056, http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf ; Superior Extrusion v. Goldman Sachs, (USDC ED Mich.), Complaint, (8/1/2013), at ¶¶ 3, 6, 11.

[419] 7/30/2013 FERC press release, "JP Morgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers," http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VDVXWKPD9aQ.

[420] 1/22/2013 FERC press release, "FERC Approves Market Manipulation Settlement with Deutsche Bank," http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp; In re Deutsche Bank Energy Trading, LLC, FERC Case No. IN12-4-000, Order Approving Stipulation and Consent Agreement, (1/22/2013), 142 FERC at ¶ 61,056, http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf .

[421] 7/16/2013 FERC press release, "FERC Orders $453 Million in Penalties for Western Power Market Manipulation," http://www.ferc.gov/media/news-releases/2013/2013-3/07-16-13.asp#.VDFvefldVu0.

[422] See, e.g., "Metals, Currency Rigging Is Worse Than Libor, Bafin Says," Bloomberg, Karin Matussek and Oliver Suess, (1/17/2014), http://www.bloomberg.com/news/2014-01-16/metals-currency-rigging-worse-than-libor-bafin-s-koenig-says.html. (quoting Elke Koenig, the top financial regulator in Germany).

[423] See, e.g., Nicholson v. The Bank of Nova Scotia et al, Case No. 14cv05682 (USDC SD NY), (7/25/2014).

[424] 2012 Summary Report, FRB-PSI-200477-510, at 482 [sealed exhibit].

The 2012 Summary Report identified a second, very different type of reputational risk that arises when a financial holding company comes under pressure, for reputational reasons, to provide financial support for an affiliate or other party that has suffered significant losses or is suspected of misconduct. The 2012 Summary Report highlighted as an example BP's decision to pay damages associated with the Deepwater Horizon oil spill.[425] The same risk was evident in the financial crisis when, for reputational reasons, firms like Bear Stearns and State Street Bank assumed significant financial obligations incurred by hedge funds with which they were associated but had no direct legal responsibility.[426]

The 2012 Summary Report expressed the opinion that financial holding companies did not adequately appreciate the reputational risks arising from their involvement with physical commodity activities.[427]

(c) Evaluating Risk Management and Mitigation Practices

After identifying multiple risks associated with physical commodity activities, the 2012 Summary Report discussed ways in which some financial holding companies attempted to manage and mitigate those risks. The analysis focused in particular on legal structures, use of third-party vendors, insurance, and capital buffers.

Legal Structures. The 2012 Summary Report found that one of the primary ways that financial holding companies sought to limit their risk for physical commodity activities was by creating separate legal structures to conduct the activities.[428] For example, the report found that Goldman Sachs typically purchased companies that engaged in power generation, rather than purchased the physical power generation assets directly, in part to shield itself from liability for activities at the power plant.[429] Similarly, the report found that Goldman Sachs avoided "overt control of its coal mine business," by using a subsidiary as the direct owner and by not hedging its underlying coal exposures, in an attempt to demonstrate the legal distinction between the financial holding company and its affiliate.[430]

The 2012 Summary Report raised a number of questions about the effectiveness of this approach. It stated:

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[425] Id. at 482, 492.
[426] See 1/2011 "Crisis Inquiry Report: Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States," prepared by the Financial Crisis Inquiry Commission, at 286. http://cybercemetery.unt.edu/archive/fcic/20110310173545/http://c0182732.cdn1.cloudfiles.rackspacecloud.com/fcic_final_report_full.pdf (explaining how the failure of two Bear Stearns funds led to the government bailout of the firm itself). See also "Test Case on the Charles," Raj Date. Cambridge Winter Center for Financial Institutions Policy (6/12/2010), http://www.cambridgewinter.org/Cambridge_Winter/Archives/Entries/2010/6/12_TEST_CASE_ON_THE_CHARLES_files/state%20street%20volcker%20061210.pdf (explaining how State Street bailed out funds that it managed, but then itself needed aid via several taxpayer-backed programs).
[427] 2012 Summary Report, at FRB-PSI-200492.
[428] Id. at 488.
[429] Id. at 489.
[430] Id.

> "There is no available historical precedent to support … the effectiveness of the 'legal structure' mitigation strategy, rather there have been cases where a company using third part[y] vendors was itself held liable for environmental damage.
>
> There have been cases where firms, due for example to action of their employees which damaged legal protections, have been held legally liable for fines and damages (e.g. the firm Total was held responsible for the spill of oil on a ship it did not own due to not following internal policies). …
>
> The integrity of legal structures cannot be guaranteed as firms could be compelled for reputational or other reasons to cover damages from an event such as in the Deepwater Horizon incident when BP incurred losses even though they were not the operator."[431]

In addition, financial holding companies using subsidiaries to conduct physical commodity activities are exposed to a "Catch-22" legal problem.[432] On the one hand, if the firm seeks to actively mitigate the risks associated with the physical commodity activities by exerting control over the subsidiary's management or operations, its actions will increase the connections between the parent and the subsidiary and increase the likelihood that any future liability incurred by the subsidiary will be imputed to the parent, facilitating the piercing of the legal distinctions between the two corporate entities. On the other hand, if the firm does not exert control over the subsidiary's management or operations, then its subsidiary may incur greater risk, which may or may not ultimately flow back as liabilities to the parent.[433]

This tension may be further exacerbated if the subsidiary is held as a merchant banking investment, which bars the financial company from routinely managing the portfolio company.[434]

While creating separate legal structures may help minimize some of the risks that could flow back to a financial holding company or its other affiliates, the 2012 Summary Report found that strategy did not ensure financial holding companies would be protected from risk.[435]

Third Party Operators. A related mitigation strategy used by some financial holding companies to avoid potential liabilities involved outsourcing key functions in physical

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[431] Id.

[432] "Catch -22," Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/catch-22, (defines "catch-22" as "a problematic situation for which the only solution is denied by a circumstance inherent in the problem or by a rule"). The term was first introduced in a book entitled, Catch-22, written by Joseph Heller.

[433] As the Federal Reserve's recent rulemaking action examining bank involvement with physical commodity activities put it: "[C]urrent management techniques designed to mitigate risks, such as frequent monitoring of risk, requirements to restrict the age of transport vessels, and review of disaster plans of third-party transporters, may have the unintended effect of increasing the potential that the [financial holding company] may become enmeshed in or liable to some degree from a catastrophic event." "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 13, 3329, 3332, prepared by the Federal Reserve, (daily ed. Jan. 21, 2014).

[434] Merchant Banking Rule, 66 Fed. Reg. 8466 (1/31/2001), codified at 12 C.F.R. Part 225, Subpart J.

[435] 2012 Summary Report, at FRB-PSI-200489 [sealed exhibit]. See also "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).

commodities activities to unrelated third parties. This strategy included, for example, hiring a third party contractor to run a power plant or operate an oil tanker. The 2012 Summary Report raised questions about the efficacy of this strategy, noting that "there have been cases where a company using third part[y] vendors was itself held liable for environmental damage."[436] The report also observed that BP was found responsible for the Deepwater Horizon oil spill despite the fact that BP was not the legal operator of the oil rig and had hired a third party to run it.[437] The report further noted that some financial holding companies exercised ongoing oversight of their third party vendors, raising the same concerns associated with a subsidiary – that extensive oversight could also lead to greater liability in the event of a disaster or misconduct.

The 2012 Summary Report concluded: "Vendor Management practices for physical commodities need[] to be improved."[438] After describing several problems, the Summary Report noted: "Current corporate policies do not readily address the unique relationship and dependency of physical commodities activities with vendors."[439]

Insurance. Another mitigation strategy examined by the 2012 Summary Report was the use of different types and levels of insurance by the financial holding companies. The 2012 Summary Report questioned the usefulness of this mitigation strategy, after its research determined that "[i]nsurance companies reportedly will not insure the full event loss due to their inability to measure the maximum potential loss."[440]

The 2012 Summary Report found that all financial companies retained some form of insurance for their physical commodity activities and that "[i]nsurance practices [we]re generally similar among firms."[441] At the same time, of the institutions whose insurance was reviewed, Bank of America, Barclays, Goldman Sachs, JPMorgan, and Morgan Stanley, the Summary Report found significant variations in the levels of insurance coverage obtained for commodity-related activities.[442]

In addition, the 2012 Summary Report found that the insurance coverage at the financial holding companies examined appeared to be insufficient. It noted that "[p]hysical commodities is a notoriously fat-tailed business with [the] insurer only covering limited losses for some risks."[443] The 2012 Summary Report found that "[i]n all cases … insurance for … catastrophic events is capped at a certain level (typically US $1 billion) and firms cannot cover any amount beyond the cap through insurance."[444] It also noted that the financial holding companies used "aggressive assumptions" to minimize estimated losses from a catastrophic event,[445] and found that, when comparing capital and insurance reserves against estimated costs associated with

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[436] 2012 Summary Report, at FRB-PSI-200489 [sealed exhibit].
[437] Id.
[438] Id. at 490.
[439] Id.
[440] Id. at 481.
[441] Id. at 491.
[442] Id.
[443] Id. at 509. See also id. at 500 (noting that insurance companies "do not have comfortable ways to assess the rail risk and thus avoid insuring the tails" for catastrophic events, such as multi-billion dollar oil spills).
[444] Id. at 491.
[445] Id. at 493 - 494.

"extreme loss scenarios," "the potential loss exceeds capital and insurance" by billions of dollars.[446]

The 2012 Summary Report concluded that, in the event of a multi-billion-dollar catastrophe such as a major oil spill, insurance would not protect a financial holding company from significant costs.

Capital. A final mitigation strategy examined by the 2012 Summary Report was the extent to which financial holding companies conducting physical commodity activities held additional capital to cover potential losses stemming from those activities. The Summary Report noted that capital can provide significant loss absorption capacity and is a critical component in risk mitigation and bank regulation, but also concluded that "current levels of capital appear insufficient to protect against a maximum loss potential."[447]

Federal regulations establish several methods for financial holding companies to calculate the amount of capital they need, with the amount based in part on the value and riskiness of the activities it undertakes.[448] The 2012 Summary Report raised concerns about how assets were being valued for capital calculation purposes, whether some assets were being excluded, and how the capital rules were being applied. The report noted, for example, that "applying capital allocation methods that are based on financial mark-to-market methodologies to physical activities leads to considerably lower capital rations than methods used by non-financial firms engaged in the same businesses."[449] The Commodities Team also noted that non-financial firms engaged in similar physical commodity activities were funded with a capital ratio of about 42%, whereas the subsidiaries of financial holding companies engaged in those activities had a capital ratio of roughly 8-10%.[450] This wide disparity was found to exist across multiple physical commodity activities including liquid pipelines, natural gas facilities, and electrical power operations.[451]

The 2012 Summary Report also highlighted weaknesses in the capital allocations for certain physical commodities activities. After examining how oil and gas were valued during storage and transportation, as well as how transportation, storage, and power generation facilities themselves were valued, the Commodities Team found inappropriate valuation methods and significant gaps in capital charges. For example, the report noted that, while commodity-related hedges may show up in Value-at-Risk measures, underlying leases or tolling agreements may incur no capital charge at all.[452]

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[446] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.
[447] Id. at 481.
[448] See, e.g., 77 Fed. Reg. 53059 (2012).
[449] 2012 Summary Report, at FRB-PSI-200499.
[450] Id. at 499, 507.
[451] Id. at 499.
[452] Id. at 501 - 502.

The 2012 Summary Report concluded: "Current levels of capital appear insufficient to protect against a maximum loss potential – on a stand alone basis."[453] In addition, it found that four major financial holding companies, Bank of America, Goldman Sachs, JPMorgan, and Morgan Stanley, had insufficient capital, even when enhanced with insurance, to cover losses associated with an extreme loss scenario, such as the Exxon Valdez oil spill, the Environmental Protection Agency's Oil Spill Loss Model, or the Deepwater Horizon oil spill event.[454] Put another way, the report determined that the financial holding companies could incur significant net losses far in excess of their insurance and capital loss absorption capabilities in the event of a catastrophic event.

Prudential Limits. One mitigation strategy discussed in the Summary Report involves financial holding company compliance with the prudential limits put in place by regulators to restrict the size of their physical commodity activities. As discussed earlier, the Federal Reserve granted complementary authority to financial holding companies conditioned upon their limiting the resulting physical commodity activities to less than 5% of their Tier 1 capital. The Gramm-Leach-Bliley Act imposed a cap on grandfathered activities, using a much higher limit equal to 5% of the financial holding company's consolidated assets. Separately, the Office of the Comptroller of the Currency imposed caps on the amount of certain physical commodities that can be held in a national bank.

As more fully explained below, those limits have been subject to various interpretations that have undermined their collective ability to ensure the safety and soundness of the banks and holding companies engaged in the physical commodity activities. One key problem is that the limits have not been considered, applied, or enforced in an integrated fashion.[455] In addition, some financial holding companies have excluded major categories of commodity-related assets or used dubious valuation methods when calculating compliance with some of the limits.[456] The 2012 Summary Report noted, for example, that JPMorgan had booked "significant amounts of base metals in the national bank entity," and did not include those holdings when calculating the financial holding company's compliance with the 5% limit on its complementary activities, noting that, in September 2012, the financial holding company hit "an all time high in physical holdings."[457]

In response, the 2012 Summary Report indicated that work was being done to develop a standard approach for valuing assets and called for better disclosures by financial holding companies to track compliance with the size limits.[458] At the same time, the Summary Report failed to discuss better integration or enforcement of existing size limits, or whether the limits themselves needed to be improved.

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[453] Id. at 481.
[454] Id. at 498.
[455] See 4/16/2014 comment letter from Subcommittee Chairman Carl Levin to Federal Reserve, "Advanced Notice of Proposed Rulemaking Related to Physical Commodities Docket No. 1479 and RIN 7100 AE-10," (hereinafter "Senator Levin Comment Letter"), http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124566_481901422162_1.pdf.
[456] See discussion of JPMorgan involvement with size limits, below.
[457] 2012 Summary Report, at FRB-PSI-200506.
[458] Id. at 484.

(d) Recommendations

In addition to identifying key risks and evaluating mitigation strategies, the 2012 Summary Report offered a number of recommendations to strengthen Federal Reserve oversight of financial holding company involvement with physical commodities. Those recommendations were as follows:

> "–While action on the 4o authority is still open, BHCs [bank holding companies] will be able to conduct physical commodity activities under the 4k permissibility/authority and Merchant Banking.
>
> –Action points include closer monitoring, strengthen the 4k through the applications process, higher capital.
>
> –Commodity businesses should be looked at in a stand-alone capacity, capital levels should be aligned to cover maximum potential loss with a buffer.
>
> –If it was not part of the BHC what amount of capital would be needed as a viable entity. ...
>
> –Firms are utilizing operating leases to extract economic value with minimal capital charge – propose a way to capitalize these leasing arrangement[s] as would be if treated under capital leasing[.]
>
> –Increase capital requirement for physical commodities activity – which could include[:]
>
> - o Eliminate the diversification benefit for ops risk capital and assign a loss probability equal to the term of the lease and not a one year period or longer.
> - o Add a specific risk charge – account for the unique nature of these assets[.]
> - o Treat operating leases as capital lease[s] and back 'on the balance sheet[.]'
>
> –Improve corporate risk governance on physical commodities activities and strengthen stress testing practices[.]
>
> –Require formal reporting of physical commodities exposures such as 9YC, !$A and 14Q and 5% tier 1 capital limit[.]
>
> –Greater definition of regulatory permissibility."[459]

The Federal Reserve told the Subcommittee that these recommendations were reviewed by senior Federal Reserve managers, but were not submitted directly to any member of the Federal Reserve Board of Governors.[460] According to Federal Reserve representatives, the recommendations were "integral" to the Federal Reserve Board's decision to reconsider its position on financial holding company involvement with physical commodities and one of many factors that led to its decision to request public comment on whether new regulations should be

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[459] Id. at 483 - 484.

[460] Subcommittee briefing by the Federal Reserve (10/8/2014).

issued.[461] Two years after the recommendations were made, however, the Federal Reserve declined to identify for the Subcommittee any that had actually been implemented.[462]

C. Taking Steps to Limit Physical Commodity Activities, 2009-Present

Since 2008, instead of allowing financial holding companies to continue to expand their involvement with physical commodities, the Federal Reserve has begun to take steps to curb high risk physical commodity activities at financial holding companies, including by halting previously permitted activities, denying or delaying requests for expanded activities, and adopting changes to capital rules that increase protections against commodities-related risks. In addition, earlier this year, the Federal Reserve sought public comment on whether it should propose new regulatory limits on banks' physical commodities activities.[463]

(1) Denying Applications

After ten years of granting financial holding company applications to engage in an increasingly broad range of physical commodity activities, beginning in 2010, the Federal Reserve began to deny some requests for expanded commodity activities.

Illiquid Oil Products. One of the first examples of this shift involved the Federal Reserve's denial of a request by JPMorgan to trade certain oil-based products known as asphalt, Canadian or CAD condensate, cutter stock, straight run fuel oil, and marine diesel.[464] These oil products, which are distillated from crude oil at refineries, are traded in relatively small volumes in less liquid markets, compared to crude oil.[465] JPMorgan had acquired small stocks of them when, in 2010, it acquired physical commodity assets from RBS Sempra, a joint venture between the Royal Bank of Scotland (RBS) and a U.S. company known as Sempra Energy.[466] At the request of RBS, the Federal Reserve had issued a 2008 complementary order allowing RBS and RBS Sempra Commodities to buy and sell those oil products, even though they were not approved by the CFTC for trading on an exchange.[467]

In August 2010, JPMorgan filed an application with the Federal Reserve for permission to trade the same oil products as RBS Sempra Commodities.[468] To support its request, JPMorgan stated in its filing that it "incorporate[d] herein by reference the considerations that the

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[461] Id.
[462] Id.
[463] See "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," prepared by Federal Reserve, 79 Fed. Reg. 13, 3329 (daily ed. Jan. 21, 2014).
[464] 2012 Summary Report, at FRB-PSI-200505.
[465] See 4/18/2011 memorandum by the Federal Reserve Commodities Team, "JPMC Asphalt, Cutter Stock, Fuel [O]il, Marine Diesel and CAD Condensate Trading Approval Application," FRB-PSI-300323 - 325, at 324.
[466] See 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Sempra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.
[467] RBS Order, at C60.
[468] 8/18/2010 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956, as amended, and 12 C.F.R. §225.89," FRB-PSI-301641 - 644, at 641.

Board cited in the RBS Order with respect to the Proposed Commodities."[469] In October 2010, the Federal Reserve asked JPMorgan to provide additional information demonstrating that the oil products retained the "attributes of price transparency, fungibility, and liquidity" that they possessed in 2008, including information about where and how the commodities were traded.[470] JPMorgan responded ten days later.[471] In April 2011, the Federal Reserve Commodities Team conducting the special review of financial holding company involvement with physical commodities provided an analysis indicating that only one of the oil products, CAD condensate, had "all of the necessary characteristics for permissibility."[472] It recommended against approving the trading of the other oil products, due to their illiquidity and lack of a futures market, and recommended maintaining the same limit on CAD condensate trading that already applied to JPMorgan's affiliate JPMC Energy Ventures.[473] After that analysis, the Federal Reserve sought and received additional information from JPMorgan regarding each of the oil products.[474] In August 2012, after it had become clear that the Federal Reserve would deny the request, JPMorgan withdrew its application to trade the oil products.[475]

The decision of the Federal Reserve not to approve JPMorgan's trading request, which took two years to finalize, is one of the first instances of the Federal Reserve reversing an earlier grant of authority to engage in an otherwise impermissible commodity activity.

Warehouse Business. A second example of the Federal Reserve's shift to a more restrictive interpretation of permissible commodities activities involves the Federal Reserve's review of JPMorgan's request to own and operate Henry Bath & Son Ltd. Henry Bath is a U.K. company that operates a global network of warehouses that store commodities traded on the London Metal Exchange (LME), including copper, aluminum, nickel, tin, lead, zinc and steel billet.[476] Its operations include warehouse services for commodities traded on the LME, NYSE Liffe or ICE Futures US,[477] as well as off-warrant stocks.[478]

As explained earlier, on July 1, 2010, as part of a larger acquisition from RBS Sempra, JPMorgan acquired Henry Bath. Under the Bank Holding Company Act, JPMorgan then had a two-year grace period to: (1) divest its ownership, (2) obtain a "complementary" order, or (3)

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[469] Id. at 643.
[470] 10/18/2010 letter from the Federal Reserve Bank of New York to JPMorgan. FRB-PSI-301650 - 651 [sealed exhibit].
[471] 10/28/2010 letter from JPMorgan to the Federal Reserve Bank of New York. "JPM Chase Request for Additional Information." FRB-PSI-301653 - 663.
[472] 4/18/2011 memorandum by the Federal Reserve Commodities Team, "JPMC Asphalt, Cutter Stock, Fuel [O]il, Marine Diesel and CAD Condensate Trading Approval Application." FRB-PSI-300323 - 325.
[473] Id. at 325.
[474] See, e.g., 12/2/2011 email from JPMorgan to the Federal Reserve, with attachment, "Additional Commodities," FRB-PSI-301666 - 670; undated submission from JPMorgan to the Federal Reserve. "Responses to Requests for Additional Information," FRB-PSI-300311 - 313.
[475] 8/7/2012 letter from JPMorgan to the Federal Reserve Bank of New York, "Notice Regarding Application for Relief in Connection with Complementary Authority," FRB-PSI-301056; 8/9/2012 letter from the Federal Reserve Bank of New York to JPMorgan, FRB-PSI-301676; Subcommittee briefing by the Federal Reserve (12/13/2013).
[476] 9/10/2013 letter from JPMorgan legal counsel to the Subcommittee, "JPMorgan Chase & Co's Sixth Response to January 11, 2013 Questionnaire," PSI-JPMorganChase-06-000001 - 013, at 005.
[477] Id.
[478] Id.

conform the investment to comply with merchant banking restrictions.[479] At first, JPMorgan sought a complementary order to own and operate the Henry Bath warehouses,[480] but in 2011, the Federal Reserve indicated it would deny the request,[481] and JPMorgan withdrew it.[482] On June 29, 2012, the day before its grace period lapsed, the bank sought a one-year extension from the Federal Reserve so that it could bring the investment into compliance with its merchant banking authority.[483] Several months later, the Federal Reserve indicated that JPMorgan could not hold Henry Bath as a merchant banking investment,[484] and gave JPMorgan a one-year extension to July 2013, on the understanding that JPMorgan would use the time to sell the company.[485] In May 2013, JPMorgan made a request for yet another year, and based upon its good faith efforts to sell the company, the Federal Reserve gave JPMorgan another year to divest the holding.[486] In March 2014, JPMorgan reached an agreement to sell certain physical commodities assets, including Henry Bath, to the Swiss-based commodities and energy firm, Mercuria.[487] That acquisition was finalized in October 2014.[488]

Other Requests. The Federal Reserve's new reluctance to approve expanded physical commodities activities was not confined to JPMorgan. It also rejected applications by Goldman Sachs and Morgan Stanley to trade physical iron ore.[489] It also denied an application by Goldman Sachs for a joint venture sugar plant in Brazil.[490]

In addition, the Federal Reserve delayed making a decision on applications requesting approval of new physical commodity activities as complementary activities. Bank of America, for example, has had a complementary application pending since 2010.[491] In 2012, Toronto

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[479] See undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582, at 580.

[480] 6/8/2011 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, FRB-PSI-300977 - 1052.

[481] See 2012 Summary Report, at FRB-PSI-200505 (stating the Federal Reserve "[r]ejected" the JPMorgan application "to hold Henry Bath metals storage facility as 4(k) complimentary activity"); Subcommittee briefing by JPMorgan (4/23/2014).

[482] 10/26/2011 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "Notice Regarding LME Metals Warehousing," FRB-PSI-301636 - 637 (withdrawing request).

[483] 6/29/2012 letter from JPMorgan to Federal Reserve Bank of New York, FRB-PSI-301061-062. In August, JPMorgan replaced that request with one for a three-year extension. 8/16/2012 letter from JPMorgan to Federal Reserve Bank of New York, FRB-PSI-300358 - 359. See also undated "Merchant Banking Investment in Henry Bath," prepared by JPMorgan for the Federal Reserve, FRB-PSI-000580 - 582.

[484] See 10/3/2012 Summary Report, at FRB-PSI-200505 (stating the Federal Reserve had "[r]ejected" the JPMorgan application to hold Henry Bath metals storage facility "under Merchant Banking Authority"); Subcommittee briefing by Federal Reserve (11/27/2013).

[485] 11/16/2012 letter from Federal Reserve to JPMorgan, FRB-PSI-300338 - 340 (granting extension to 7/1/2013); 10/31/2012 Federal Reserve memorandum, "Request by JPMorgan Chase & Company for an extension of time to divest or conform nonbanking activities," FRB-PSI-301525 - 531.

[486] 7/11/2013 letter from the Federal Reserve to JPMorgan, FRB-PSI-301069 - 071.

[487] Subcommittee briefing by Mercuria (9/12/2014). See also "JPMorgan sells physical commodities unit to Mercuria for $3.5 billion," Reuters, Dmitry Zhdannikov and Chris Peters (3/19/2014), http://www.reuters.com/article/2014/03/19/us-jpmorgan-mercuria-idUSBREA2I0LG20140319.

[488] See 10/3/2014 JPMorgan press release, "J.P. Morgan Completes Sales of Physical Commodities Assets," http://investor.shareholder.com/jpmorganchase/releasedetail.cfm?ReleaseID=874514.

[489] 2012 Summary Report, at FRB-PSI-200505.

[490] Id.

[491] 5/4/2010 letter from Bank of America legal counsel to Federal Reserve, "Section 4(k)(1)(B) Notification by Bank of America Corporation of Its Intention to Continue to Engage in Certain Physically-Settled Commodity Trading

Dominion Bank submitted an application for complementary authority to engage in certain physical commodity activities involving natural gas, but withdrew it in 2014.[492]

More broadly, in July 2013, the Federal Reserve issued a public statement that it was reconsidering its previously permissive view of "complementary" orders: "The Federal Reserve regularly monitors the commodity activities of supervised firms and is reviewing the 2003 determination that certain commodity activities are complementary to financial activities and thus permissible for bank holding companies."[493] That announcement, now over a year old, has not yet resulted in a broader policy statement or regulatory proposals on how the Federal Reserve intends to interpret the Gramm-Leach-Bliley complementary authority.

(2) Using Other Means to Reconsider Physical Commodity Activities

In addition to taking a more restrictive approach to applications for expanded physical commodity activities, the Federal Reserve has signaled its intention to reconsider financial holding company involvement with physical commodities using other mechanisms to restrain physical commodity activities or reduce their attendant risks to the financial system, including through an ongoing study and regulatory actions.

Section 620 Study. In 2010, Congress enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act. Section 620 of that Act, which was added to the legislation in an amendment sponsored by Senators Jeff Merkley and Carl Levin, requires federal banking regulators to conduct a review and prepare a report on "the activities that a banking entity may engage in under Federal and State law, including activities authorized by statute and by order, interpretation and guidance."[494] That study, which is ongoing, offers another mechanism to reconsider financial holding company involvement with physical commodities.

The sponsors of the Section 620 study have explained that it was intended to "address the risks to the banking system arising from … longer-term instruments and related trading."[495] Specifically, Section 620:

> "directs Federal banking regulators to sift through the assets, trading strategies, and other investments of banking entities to identify assets or activities that pose unacceptable risks to banks, even when held in longer-term accounts. Regulators are expected to apply the

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Activities and Related Activities, Engage in Energy Tolling Activities and Continue to Provide Certain Asset and Energy Management Services, through Certain Affiliates." FRB-PSI-500001 - 218 (providing notice of the bank's intent to engage in an expanded set of physical commodity activities as a result of its acquisition of Merrill Lynch); Subcommittee briefing by Federal Reserve (12/13/2013); 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 001.

[492] 10/2/2012 letter from Toronto Dominion Bank legal counsel to Federal Reserve, "Notice by The Toronto-Dominion Bank to Engage in Commodity Trading Activities," FRB-PSI-500219 - 231; Subcommittee briefing by Federal Reserve (12/13/2013); 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 001.

[493] Federal Reserve statement to the New York Times (7/19/20013), copy provided by the Federal Reserve to the Subcommittee.

[494] Section 620(a), Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. §5301.

[495] 156 Congressional Record S5870, S5895 (daily ed. July 15, 2010) (statement of Sen. Merkley).

> lessons of that analysis to tighten the range of investments and activities permissible for banking entities, whether they are at the insured depository institution or at an affiliate or subsidiary, and whether they are short or long term in nature."[496]

It also directs the banking regulators to focus on "any financial, operational, managerial, or reputation risks associated with or presented as a result of the banking entity engaged in the activity or making the investment."[497]

The 2012 Summary Report explicitly points to the Section 620 report as a possible mechanism for clarifying appropriate commodity-related activities for banks and financial holding companies.[498] Other federal banking regulators have also indicated that physical commodities activities would be an appropriate topic for the Section 620 study and report. The report could be used by the Federal Reserve and OCC, for example, to coordinate their interpretations of permissible physical commodity activities, as well as appropriate safeguards to reduce risks, including their respective 5% limits on the size of physical commodity holdings. However, the report is nearly 3 years overdue,[499] and there is no sign of when it may be completed.

(3) Changing the Rules

In addition to reconsidering financial holding company involvement with physical commodities by reconsidering its complementary orders and using the ongoing Section 620 study, the Federal Reserve is also making use of its regulatory authority. Recently, together with other federal regulators, the Federal Reserve issued new capital rules that, in part, addressed commodity-related concerns. In early 2014, the Federal Reserve also issued an advanced notice of proposed rulemaking soliciting public comment on whether it should take regulatory action to address a number of commodity-related issues.

Revising the Capital Rules. In December 2010, the Basel Committee on Banking Supervision proposed significant revisions to the international framework for regulating bank capital, often referred to as the Basel III proposal.[500] The Basel III framework revised many of the mechanisms and criteria used to determine appropriate levels of capital for financial holding companies, including their commodities activities.[501] On July 2, 2013, the Federal Reserve adopted rules to implement the Basel III framework, and on July 9, 2013, the Office of the

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[496] Id.
[497] Section 620(a)(2)(B), Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. §5301.
[498] See 2012 Summary Report, at FRB-PSI-200506.
[499] See Section 620(a)(1) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, P.L. 111-203, codified at 12 U.S.C. 5301 (indicating study was to be finished in December 2011).
[500] See 12/2010 Basel Committee on Banking Supervision report "Basel III: International framework for liquidity risk measurement, standards and monitoring," http://www.bis.org/publ/bcbs188.pdf.
[501] See 12/2010 (revised 6/2011) Basel Committee on Banking Supervision report "Basel III: A global regulatory framework for more resilient banks and banking systems", at 15, http://www.bis.org/publ/bcbs189.pdf.

Comptroller of the Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) followed suit.[502]

The new capital rules directly affect how financial holding companies must account for their physical commodity activities. First, the Basel III framework made a number of changes to the risk weightings and capital calculations for assets held in a trading book. These changes, which were implemented in the new federal capital rules, generally can be viewed as marginally increasing capital requirements for both financial and physical commodity positions held as trading assets.[503]

The Basel III framework, and the corresponding U.S. implementing regulations, also require financial holding companies to maintain added capital to absorb the risk of counterparty defaults on a portfolio of OTC derivatives by requiring financial holding companies to make a credit valuation adjustment on a portfolio basis when calculating their capital requirements.[504] This additional capital requirement may reduce the extent to which financial holding companies use OTC derivatives in their commodity activities.

In addition, the Basel III framework increased the risk weights for merchant banking equity exposures, imposing risk weights of 300%, 400%, or 600% on those holdings, depending in part upon whether the acquired equity was publicly traded and whether the portfolio company qualifies as an "investment firm."[505] The capital charges focus on the fact that the financial holding company's direct investment is an equity; it does not take into account any risks related to the portfolio company's underlying activities. The result is that the merchant banking capital charge for acquiring a company engaged in trading uranium versus a company operating a small grocery may be the same, despite the likely significant variance in the risks between those two investments. In the view of the capital rule, it is the equity holding of the bank that counts, not the activities of the portfolio company. While the new merchant banking capital rules do not reflect the risks associated with the underlying portfolio companies, the increased capital charge for equity investments may lead to reduced merchant banking positions held by financial holding companies, including merchant banking investments involving physical commodity activities.

Collectively, these changes in how banks calculate capital to insulate against financial risks have put some downward pressure on banks' commodity-related activities,[506] including their physical commodity activities. Although the new capital rules have yet to fully take effect, some banks have already initiated compliance, resulting in increased capital. Critics note that,

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[502] "Regulatory Capital Rules: Regulatory Capital, Implementation of Basel III, Capital Adequacy, Transition Provisions, Prompt Corrective Action, Standardized Approach for Risk-weighted Assets, Market Discipline and Disclosure Requirements. Advanced Approaches Risk-Based Capital Rule, and Market Risk Capital Rule: Final Rule". 78 Fed. Reg., 62018, 62021-62022 (daily ed. Oct. 11,2013. http://www.gpo.gov/fdsys/pkg/FR-2013-10-11/pdf/2013-21653.pdf.

[503] See, e.g., 77 Fed. Reg. 53059 (2012).

[504] Id.

[505] 1/1/2014 "Summary of Capital Requirements Applicable to Merchant Banking Investments, Commodities, and Related Items under the Federal Reserve's Regulations as of January 1, 2014," memorandum prepared by the Federal Reserve FRB-PSI-708382-385, at 384 [sealed exhibit].

[506] See, e.g., "Basel III part of 'double whammy' hitting bank commodity trade," Independent Chemical Information Service, Seth Freedman, (1/1/2012), http://www.icis.com/resources/news/2012/01/10/9522349/basel-iii-part-of-double-whammy-hitting-bank-commodity-trade/.

while the new rules have increased capital requirements for commodity-related assets and merchant banking investments, the new rules still fail to fully protect against the potential monetary risks associated with physical commodity activities, including the risks associated with catastrophic events, market valuation problems, and other operational and reputational issues.[507]

Proposing New Rules for Physical Commodity Activities. On January 21, 2014, the Federal Reserve issued a notice which outlined the current regulatory landscape governing financial holding company involvement with physical commodities activities, identified potential risks and regulatory weaknesses, and requested public comment on whether new regulatory limits were needed. The notice requested public comment:

> "on all aspects of physical commodities activities of BHCs [Bank Holding Companies] and banks and invites comments on the risks and benefits of allowing … these activities as well as ways in which risks to the safety and soundness of a FHC [Financial Holding Company] and … to the financial system can be contained or limited."[508]

In its wide-ranging advanced notice of proposed rulemaking, the Federal Reserve noted the significant increase in physical commodity activities by financial holding companies since 2007, and suggested a fundamental re-thinking of the Federal Reserve's previously expansive interpretations of the laws allowing those activities. The notice invited public comment on twenty-four separate questions.[509]

Assessing Risks and Risk Mitigation. In the notice, the Federal Reserve highlighted the potential danger posed to banks by "tail risks," such as environmental disasters or other catastrophic events that affect physical commodity activities. The notice discussed, for example, such recent catastrophic events as the Deepwater Horizon oil spill in the Gulf of Mexico (which killed 11 people and has cost BP over $42 billion in losses); a natural gas pipeline rupture in San Bruno, California (which killed 8 people and will likely cost billions of dollars in damages); a natural gas power plant explosion in Middletown, Connecticut (which killed 6 people); the Fukushima Daiichi nuclear power plant meltdown in Tohuku, Japan; and the crash and explosion of a crude oil-laden railway train in Quebec, Canada (which killed 47 people), as evidence that the "risks of catastrophic events continue."[510] The notice stated that these "recent catastrophes suggest that the cost of preventing accidents are high and the costs and liability related to physical commodity activities can be difficult to limit and higher than expected."[511]

The notice connected these catastrophic event risks to the recent financial crisis, which exposed the negative consequences of underappreciated tail risks combined with contagion.[512] It explained that if a financial holding company owned "physical commodities that are part of a catastrophic event[,] it could suddenly and severely undermine public confidence in the [financial holding company] or its insured depository institution and undermine their access to

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[507] Subcommittee briefing by the FDIC (9/3/2014).
[508] "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 3329 (daily ed. Jan. 21, 2014).
[509] Id.
[510] Id. at 3331
[511] Id. at 3329, 3331.
[512] Id.

funding markets."[513] The notice raised the concern that, in the case of a large financial institution denied access to funding markets, the resulting financial problems, if severe enough, could spread beyond the institution to damage its counterparties and even the broader U.S. financial system.

The Federal Reserve also observed that "current risk management techniques designed to mitigate risks, such as frequent monitoring of risk, requirements to restrict the age of transport vessels, and review of disaster plans of third-party transporters, may [have] the unintended effect of increasing the potential that the [financial holding company] may become enmeshed in or liable to some degree from a catastrophic event."[514]

While the notice focused on risks associated with catastrophic environmental disasters, it did not discuss in detail other risks that also affect many physical commodity businesses. For example, it did not address the risk of changing regulations or technologies which may render a physical commodity operation significantly more or less valuable over a short period of time. In the United States, for example, a combination of market forces and emissions rules has dramatically altered the fuel source for power generation. While coal used to provide more than half of U.S. power generation, it is now down to just over one-third, with natural gas largely filling the void.[515] This dramatic shift has altered world-wide demand for coal and the value of coal-related commodity activities. Similarly, the Fukushima Diachii nuclear disaster in Japan had a dramatic chilling effect on the nuclear power industry, lowering the value of uranium-related commodity activities.[516] The notice similarly did not examine other types of risks that may materially impact a commodity-related business, such as labor unrest or political upheaval.[517] Instead, the notice solicited public comment on the nature and types of risks posed by physical commodity activities, how they were addressed by financial holding companies, and how the Federal Reserve could enhance protections by further mitigating such risks or limiting activities.

Assessing Authority. The notice also posed questions regarding the appropriate application of the Gramm-Leach-Bliley complementary, merchant banking, and grandfather authorities in the context of physical commodities. The proposal sought comment on whether complementary commodities activities should be subjected to: (i) increased insurance requirements, (ii) enhanced capital requirements; or (iii) "absolute dollar limits and caps based on a percentage of the [financial holding company's] regulatory capital or revenue."[518] With respect to merchant banking authority, it questioned whether merchant banking investments

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[513] Id. at 3329, 3332.
[514] Id.
[515] See, e.g., "Natural Gas Dethrones King Coal As Power Companies Look To Future," National Public Radio, Christopher Joyce (3/1/2013). http://www.npr.org/2013/03/01/173258342/natural-gas-dethrones-king-coal-as-power-companies-look-to-future.
[516] See, e.g., "Fukushima, 3 Years Later: Disaster Still Lingers," Mashable, Andrew Freedman (3/11/2014), http://mashable.com/2014/03/11/three-years-after-fukushima/ ; "The Impact of Fukushima Daiichi Nuclear Accident on People's Attitudes Toward Nuclear Energy Policy: Silent Movement," XVIII ISA World Congress of Sociology, Noriko Iwai and Kuniaki Shishido (7/19/2014), https://isaconf.confex.com/isaconf/wc2014/webprogram/Paper53522.html.
[517] See, e.g., discussion of how these issues affected Goldman's involvement with coal, below.
[518] 79 Fed. Reg. at 3333 - 334.

should be subject to: (i) increased capital requirements; (ii) caps on the total dollar amount of such investments; or (iii) enhanced restrictions on the routine management of merchant banking portfolio companies.[519] With respect to the grandfather clause, the notice asked about its necessity 15 years after enactment of the law, as well as whether any additional requirements or limits should be imposed, and how it might be reconciled with the other authorities for competitiveness reasons, since most financial holding companies cannot invoke the grandfather clause to authorize additional physical commodity activities.[520]

Current Status. The initial comment period for the notice ended April 16, 2014, with over 17,000 comments having been filed with the Federal Reserve.[521] Comments came from small business owners, commodity markets participants, public interest groups, financial holding companies, members of Congress, legal experts, and concerned members of the public.[522] The vast majority were letters submitted by members of the public expressing support for increased restrictions on financial holding company involvement with commodity activities. Other letters generally supported some or all of the activities of financial holding companies in the commodity markets, including their roles as financiers of physical inventories for producers or consumers.[523] Still others expressed concerns with the risks posed by physical commodity activities to the financial holding companies, U.S. markets, and U.S. economy, and urged additional restrictions on the financial holding companies conducting those activities.[524] While the Federal Reserve has not yet taken further action based on the notice, its issuance of the notice indicates the regulator is considering taking regulatory action to restrict financial company involvement with physical commodities and reduce the attendant risks.

D. Analysis

Federal law gives the Federal Reserve key authority to determine financial holding company involvement with physical commodities. For nine years, from 2000 to 2008, the Federal Reserve used that authority generally to facilitate financial holding company expansion into physical commodity activities. In response, large financial holding companies like Goldman, Morgan Stanley, and JPMorgan expanded their commodity activities and asserted

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[519] Id. at 3334 - 335.

[520] Id. at 3335 - 336.

[521] See 2/24/2012 "Complementary Activities. Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities [R-1479]," Federal Reserve website. http://www.federalreserve.gov/apps/foia/ViewAllComments.aspx?doc_id=R-1479&doc_ver=1.

[522] Id.

[523] Id., see, e.g., 4/16/2014 letter from Securities Industry and Financial Markets Association, American Bankers Association, et al to the Federal Reserve. "Comment Letter on the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities. and Other Activities of Financial Holding Companies Related to Physical Commodities (Docket No. R-1479; RIN 7100 AE-10)," Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140424/R-1479/R-1479_041614_124557_481903450084_1.pdf.

[524] Id. See also, e.g., 4/16/2014 comment letter from Subcommittee Chairman Levin, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124566_481901422162_1.pdf; 4/16/2014 comment letter from Senators Sherrod Brown and Elizabeth Warren, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124552_376253020070_1.pdf; 4/16/2014 comment letter from Americans for Financial Reform, Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/April/20140417/R-1479/R-1479_041614_124629_505856748926_1.pdf.

control over vast physical commodity holdings and operations involving the storage, transport, production, refinement, and trading of oil, natural gas, aluminum, copper, coal, electricity, and other commodities.

After the financial crisis and a special review conducted by the Federal Reserve raised concerns about the operational, catastrophic event, valuation, reputational, and systemic risks posed by physical commodity activities, the Federal Reserve began to reconsider its role. Beginning in 2010, the Federal Reserve took some initial steps to restrict and reduce financial holding company involvement with physical commodities. At the same time, the Federal Reserve failed to resolve ongoing, basic questions about the scope of the Gramm-Leach-Bliley complementary, grandfather, and merchant banking authorities, thereby enabling large financial holding companies to continue to deepen their involvement with physical commodities. In early 2014, the Federal Reserve announced it was considering issuing new regulations on financial holding company involvement with physical commodity activities, but nearly a year later has yet to propose new rules. The Federal Reserve's failure to resolve key issues related to bank involvement with physical commodities has weakened longstanding American barriers against the mixing of banking and commerce as well as longstanding safeguards protecting the U.S. financial system and economy against undue risk. The following chapters illustrate some of the consequences.

IV. GOLDMAN SACHS

The Goldman Sachs Group, Inc., a financial holding company since 2008, has described commodities as one of its core businesses. It currently conducts billions of dollars in physical commodity activities involving energy, metals, and related businesses, and has expressed a commitment to continuing in the physical commodities field. This case study examines just three examples of its physical commodities activities, involving the trading of physical uranium, the operation of coal mines in Colombia, and possession of a global metals warehousing business.

A. Overview of Goldman Sachs

The Goldman Sachs Group, Inc. is a global financial services firm incorporated under Delaware law and headquartered in New York City.[525] It is listed on the New York Stock Exchange (NYSE) under the ticker symbol "GS."[526] In addition to being one of the largest financial holding companies in the United States, Goldman Sachs conducts operations in more than 30 countries, has over 32,000 employees, has a market capitalization of $77 billion, and manages assets of more than $938 billion.[527] In 2013, it reported total consolidated assets of $912 billion,[528] net revenues of $34.2 billion, and net earnings of $8 billion.[529]

Goldman Leadership. The Chairman of the Board and Chief Executive Officer of Goldman Sachs Group, Inc. is Lloyd Blankfein, who has held that post since 2006.[530] The President and Chief Operating Officer is Gary Cohn, and the Chief Financial Officer is Harvey Schwartz. All three executives started their careers in the firm at its J. Aron & Co. commodities subsidiary, described below.[531] The Global Head of Commodities, from 2007 to 2012, was

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[525] 7/16/2013 Form 8-K, The Goldman Sachs Group, Inc., at cover page [hereinafter 7/16/2013 Goldman Form 8-K], http://www.goldmansachs.com/investor-relations/financials/archived/8k/pdf-attachments/8k-7-16-13.pdf ; see also "Top Fifty Holding Companies (HC) as of 6/30/2013," Federal Reserve System, National Information Center, http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx.

[526] Undated "Stock Chart," Goldman website, http://www.goldmansachs.com/investor-relations/stock-chart/index.html.

[527] See undated "Governance at Goldman Sachs[:]Key Facts," Goldman website, http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf; 9/27/2013 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 3, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20131001.pdf; 2/28/2013 Form 10-K, The Goldman Sachs Group, Inc., at 70 (hereinafter, "2/28/2013 Goldman Form 10-K"). http://www.goldmansachs.com/investor-relations/financials/archived/10k/docs/2012-10-K.pdf; "Top Fifty Holding Companies (HC) as of 6/30/2013," Federal Reserve System, National Information Center, http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx.

[528] See 12/31/2013 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Goldman Sachs with the Federal Reserve.

[529] Undated "Governance at Goldman Sachs: Key Facts," Goldman website, http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf.

[530] Undated Goldman biography of Lloyd Blankfein, Goldman website, http://www.goldmansachs.com/who-we-are/leadership/executive-officers/lloyd-c-blankfein.html.

[531] See, e.g., "The J. Aron Takeover of Goldman Sachs," New York Times, Susanne Craig (10/1/2012), http://dealbook.nytimes.com/2012/10/01/the-j-aron-takeover-of-goldman-sachs/?_php=true&_type=blogs&_r=0.

Isabelle Ealet.[532] The current Global Co-Heads of Commodities are Greg Agran and Guy Saidenberg.[533] The head of Global Commodities Principal Investments is Jacques Gabillon.[534] The head of J. Aron & Co. is Ashok Varadhan.[535]

(1) Background

Goldman Sachs was formed by Marcus Goldman in 1869, as a small commercial paper company.[536] It eventually turned to investment banking, specializing in underwriting Initial Public Offerings for corporations offering stock to the public.[537] After the company lost heavily in the stock market crash of 1929, it slowly rebuilt its business as a securities firm, providing investment advice to corporate clients, arranging and executing mergers and acquisitions, and arranging financing for clients through stock and bond offerings.[538] In 1979, Goldman obtained a license to trade commodities and, in 1981, launched a major expansion of its commodity activities.[539] In 1999, Goldman converted from a private partnership to a publicly traded corporation.[540]

Bank Holding Company. In September 2008, in the midst of the financial crisis, Goldman submitted,[541] and the Federal Reserve approved on the same day,[542] an application for it to become a bank holding company with access to Federal Reserve lending programs. At the same time, Goldman converted an industrial bank it held in Utah into a state-chartered bank.[543]

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[532] Undated Goldman biography of Isabelle Ealet, Goldman website. http://www.goldmansachs.com/who-we-are/leadership/management-committee/isabelle-ealet.html; "Commodities trading loses its Goldman queen," Financial Times, Javier Blas (1/12/2012), http://www.ft.com/intl/cms/s/0/ec8af7f0-3d02-11e1-ae07-00144feabdc0.html#axzz3FUdL9Mxe. In 2012, Ms. Ealet was appointed Co-Head of the Securities Division at Goldman.

[533] Subcommittee interview of Greg Agran (10/10/2014).

[534] Id.

[535] 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008.

[536] "A Brief History of Goldman Sachs," WSJ.com. http://online.wsj.com/article/SB10001424052748704671904575193780425970078.html.

[537] Id.

[538] Id.

[539] See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y.

[540] "Undated "Governance at Goldman Sachs[:] Key Facts," Goldman website, http://www.goldmansachs.com/investor-relations/corporate-governance/corporate-governance-documents/key-facts.pdf.

[541] See 9/21/2008 "Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC," FRB-PSI-303638 - 662 (applying to become banking holding companies).

[542] See 9/21/2008 "Order Approving Formation of Bank Holding Companies," prepared by the Federal Reserve, http://www.federalreserve.gov/newsevents/press/orders/orders20080922a1.pdf; 9/21/2008 Goldman Sachs press release, "Goldman Sachs to Become Fourth Largest Bank Holding Company," http://www.goldmansachs.com/media-relations/press-releases/archived/2008/bank-holding-co.html. See also "Shift for Goldman and Morgan Marks the End of an Era," New York Times, Andrew Ross Sorkin and Vikas Bajaj (9/21/2008), http://www.nytimes.com/2008/09/22/business/22bank.html.

[543] See 9/21/2008 "Order Approving Formation of Bank Holding Companies," prepared by the Federal Reserve, http://www.federalreserve.gov/newsevents/press/orders/orders20080922a1.pdf. The name of the Utah bank was Goldman Sachs Bank USA. Id.

Goldman also elected to become a financial holding company.[544] Goldman has one U.S. depository and lending bank, Goldman Sachs Bank USA, which is chartered in New York and insured by the FDIC.[545] One business unit of the bank is called "GS Private Bank," which serves high-net worth individuals and families.[546] The bank is also a registered swap dealer.[547] Goldman also owns several banks outside of the United States, including Goldman Sachs International Bank of the United Kingdom.[548] As of December 31, 2013, Goldman Sachs Bank USA and Goldman Sachs International Bank reported a total of about $70 billion in savings, demand, and time deposits.[549]

Key Subsidiaries. In addition to its banks, other key U.S. subsidiaries of The Goldman Sachs Group, Inc. include Goldman Sachs & Co., which is registered as a U.S. broker-dealer, futures commission merchant, and swap dealer; Goldman Sachs Asset Management LP, a U.S. investment advisor; and J. Aron & Co., a swap dealer and authorized electrical power marketer.[550] Two key U.K. subsidiaries are Goldman Sachs International, a U.K. broker-dealer and swaps dealer; and Goldman Sachs Asset Management International, a U.K. investment advisor.[551]

Major Business Lines. According to Goldman, it has four key business segments: (1) Investment Banking, which includes work related to mergers and acquisitions, restructurings and spin-offs, debt and equity underwriting, and derivatives transactions; (2) Institutional Client Services, which facilitates client transactions primarily for corporations, financial institutions, investment funds, and governments in fixed income, equity, currency and commodity products; provides financing, securities lending, and other prime brokerage services; and makes markets and clears client transactions on major stock, options and futures exchanges worldwide; (3) Investing & Lending, which invests in and originates loans to clients; and (4) Investment

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[544] See undated "Financial Holding Companies," Federal Reserve, http://www.federalreserve.gov/bankinforeg/fhc.htm.
[545] See undated "Banking," Goldman website, http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/. Goldman also has a U.K. bank, Goldman Sachs International Bank, and an Irish bank, GS Bank Europe. See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 2, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf.
[546] See undated "Private Wealth Management Services—United States," Goldman website, http://www.goldmansachs.com/what-we-do/investment-management/private-wealth-management/services/united-states.html.
[547] See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 22, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf; undated "Banking," Goldman website, http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/.
[548] See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 2, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf.
[549] Id. at 15; undated "Banking," Goldman website, http://www.goldmansachs.com/what-we-do/investing-and-lending/banking/; undated "Private Wealth Management Services—United States," Goldman website, http://www.goldmansachs.com/what-we-do/investment-management/private-wealth-management/services/united-states.html.
[550] See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 2, 22, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf.
[551] Id.

Management, which provides investment management and brokerage services, investment products, and wealth advisory services to high net worth individuals.[552]

Commodities. The Institutional Client Services business segment includes Global Commodities, also referred to by Goldman as "GS Commodities," which is Goldman's leading commodities-related business unit. In 2013, GS Commodities had a total of about 235 employees.[553] According to Goldman, GS Commodities "provides financial and physical risk management solutions to a wide range of global clients, including utilities, producers, industrial users, sovereigns, state owned entities, and financial institutions."[554] In addition, "GS Commodities invests in commodity-related businesses to generate returns and to create synergies within the franchise."[555] The following chart shows how GS Commodities fits within the holding company's organizational structure and its own three main subdivisions:



Source: Organizational chart prepared by Goldman Sachs, PSI-Goldman-10-000002.

One of the subdivisions within GS Commodities is Global Commodities Principal Investing (GCPI) which "invests as principal in companies/assets linked to the global commodities trade."[556] Goldman has described GCPI to its Board of Directors as an entity that

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[552] Undated "At a Glance," Goldman website, http://www.goldmansachs.com/who-we-are/at-a-glance/index.html; 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 3, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf.
[553] 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of the The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-400077 - 098, at 078.
[554] 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 015.
[555] Id.
[556] 3/2010 "Global Commodities Principal Investments[:] Commodities Private Equity Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-602243 - 274, at 246. See also 9/2013 "Global Commodities & Global

"seeks attractive risk-adjusted returns … [and] focuse[s] on private companies / assets which are then held under the Merchant Banking Exemption."[557] GCPI has sponsored a number of investment funds which appear to be financed solely by Goldman, with no inclusion of funds from third party investors. According to Goldman, GCPI investment professionals "do not operate the businesses in the Group's portfolio but rather employ experienced management teams for portfolio companies and supervis[e] investments at [the] board level."[558] In 2010, GCPI's portfolio of investments included 16 projects.[559]

According to Goldman, GCPI's key investments over the years have included an Australian coal mine, an oil and gas exploration company, a natural gas production company in the former Soviet Union, a sugar-based ethanol production company in Brazil, and two bulk carrier shipping joint ventures.[560] Additional key GCPI investments include the Colombian coal mines and Metro warehousing business, discussed below.[561] GCPI also contributed analysis to Goldman's purchase of Nufcor's uranium trading business, also discussed below.

The key legal entity executing the majority of Goldman's commodity activities is J. Aron & Co., a commodities trading firm purchased by Goldman in 1981.[562] GS Commodities books, for example, the majority of its commodity-related trades, including futures, swaps, options, and forward transactions, through J. Aron & Co.[563] J. Aron & Co. also acts as "the primary, but not exclusive, legal entity that engages in market making in commodities and commodity derivative products" for GS Commodities.[564] In addition, J. Aron & Co. performs some physical commodity activities, such as selling coal produced by Goldman's coal mines.[565] J. Aron & Co.

Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087.

[557] 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087. In addition, at times, Goldman also asserted grandfather authority, discussed below, as another potential basis for holding some of the GCPI investments. See, e.g., 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301 - 317, at 303 (stating that the investment was "permissible under][Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.").

[558] 3/2010 "Global Commodities Principal Investments[:] Commodities Private Equity Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-602243 - 274, at 246.

[559] Id. at 265 - 272.

[560] Id. at 247; 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087. See also 3/31/2013 "Commodity, Energy, E&P, Renewable Energy Equity Investments," chart prepared by Goldman, FRB-PSI-400065 - 070.

[561] See 3/2010 "Global Commodities Principal Investments[:] Commodities Private Equity Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-602243 - 274, at 265; 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087.

[562] 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008; 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 013.

[563] 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008.

[564] 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001-011, at 002.

[565] See discussion, below, on Goldman's involvement with coal.

is authorized to act as a swap dealer and electrical power marketer.[566] It currently has about 33 employees who work out of various Goldman offices; J. Aron & Co. has no separate offices of its own.[567]

Commodities-Related Merchant Banking. Goldman also engages in commodity-related activities through certain investment funds maintained by its Merchant Banking Division, depicted on the chart above. Goldman describes the Merchant Banking Division as "the primary center for Goldman Sachs' long term principal investing activity ... across corporate, real estate and infrastructure strategies."[568] The Merchant Banking Division houses, for example, GS Infrastructure Partners, a subsidiary which Goldman established in 2006, to sponsor a private equity fund focused on infrastructure projects, including ventures involving electricity, natural gas, and power generation.[569] GS Infrastructure Partners sponsored a $6.5 billion fund in 2006; and a second $3.1 billion fund in 2010.[570] Its projects have included, for example, a 2014 investment of more than $1 billion to acquire an 18% stake in Dong Energy, the largest utility in Denmark, which explores for energy and constructs and operates power plants;[571] an investment in an electricity distribution network in Finland, Elenia Oy;[572] solar and wind generation projects in Japan;[573] and 100% ownership of a natural gas transmission and distribution company in Spain, Endesa Gas.[574] The Merchant Banking Division also houses GS Capital Partners, a much larger private equity fund used by Goldman to invest in such commodity-related ventures as the $22 billion buyout of Kinder Morgan Inc., a pipeline company.[575]

Still another business unit with commodity-related merchant banking investments, also depicted in the above chart, is the Special Situations Group. Goldman described this group to its Board of Directors as "specializ[ing] in lending to and investing in middle market companies on a risk-adjusted return basis. Equity investments are held under the merchant banking

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[566] See 6/27/2014 "The Goldman Sachs Group, Inc. Global Resolution Plan," at 2, 22, http://www.federalreserve.gov/bankinforeg/resolution-plans/goldman-sachs-1g-20140701.pdf.

[567] 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008; Subcommittee briefing by Goldman legal counsel (10/7/2014).

[568] Undated "Direct Private Investing." Goldman website, http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/index.html.

[569] See "Direct Private Investing Equity - GS Infrastructure Partners." Goldman website, http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/equity-folder/gs-infrastructure-partners.html.

[570] Id.

[571] Goldman's investment in the largely state-owned utility, when announced to the public, sparked widespread opposition in Denmark, but was nevertheless completed. See, e.g., "A closer look at a Goldman Sachs deal many in Denmark find rotten," Financial Times, Richard Milne (1/31/2014), http://www.ft.com/intl/cms/s/0/92816e68-8a6c-11e3-9c29-00144feab7de.html#axzz3EdqllSm5; "Goldman Deal Threatens Danish Government," New York Times, Danny Hakim (1/30/2014), http://dealbook.nytimes.com/2014/01/30/goldman-deal-threatens-danish-government/.

[572] See, e.g., 3/31/2013 "Commodity, Energy, E&P, Renewable Energy Equity Investments," chart prepared by Goldman, FRB-PSI-400065 - 070, at 065.

[573] Id. at 066.

[574] See, e.g., "Goldman Sachs Infrastructure funds acquire remaining 20 % stake in Endesa Gas," InfraPPP (11/8/2013), http://infrapppworld.com/2013/11/goldman-sachs-infrastructure-funds-acquire-remaining-20-stake-in-endesa-gas.html.

[575] See "Direct Private Investing Equity-GS Capital Partners," Goldman website,"http://www.goldmansachs.com/what-we-do/investing-and-lending/direct-private-investing/equity-folder/gs-capital-partners.html. See also "Kinder Morgan Accepts $15 Billion Buyout Offer," New York Times, Jad Mouawad (8/28/2006), http://www.nytimes.com/2006/08/28/business/29kindercnd.html?_r=1&.

exemption."[576] As of September 2013, the Global Special Situations Group held "19 investments in commodities assets totaling a current book value of $683 [million] vs. a $13 [billion] total portfolio."[577] They included a U.S. geothermal energy provider, a wind power company, a solar power plant, a company involved with residential rooftop solar systems, oil and gas exploration and drilling companies, and coal facilities.[578]

In June 2014, Goldman reported to the Federal Reserve that it held merchant banking investments with a total value of about $15 billion, but it is unclear how many of those were commodity related. It is also unclear whether the total included all of Goldman's various commodity-related merchant banking investments, including those made through the Global Commodities Principal Investing unit, Merchant Banking Division, and Special Situations Group.[579]

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, Goldman trades commodities-related financial instruments, including futures, swaps, and options, involving billions of dollars each day. Goldman is among the ten largest financial institutions in the United States trading financial commodity instruments, according to Coalition Ltd., a company that collects commodity trading statistics.[580] Data compiled by the Office of the Comptroller of the Currency (OCC), which applies to national banks and does not include their holding companies, indicates Goldman is one of the four largest banks trading commodity-related derivatives.[581]

Commodity Revenues. In a 2011 presentation prepared for its Board of Directors, Goldman stated: "Over the last 5 years, GS Commodities has generated more than $10 [billion] of pre-tax earnings, with an average margin of ~60%."[582] The presentation also noted: "In the last 2 years, margins and market share have declined dramatically as a result of increased competition from both financial and non financial institutions."[583] A 2013 presentation to the Board of Directors included a chart tracing Goldman's commodity-related revenues over 30 years. The chart showed that commodity revenues were generally under $500 million from 1981 until 2000, and then began to climb, producing four years of relatively high revenues, from 2006 until 2009, before they once more began to decline. The chart included the following figures:

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[576] 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-400077 - 098, at 093.
[577] Id.
[578] Id. at 093 - 094.
[579] See 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12," filed by Goldman, FRB-PSI-800013 - 016.
[580] See 3/2014 "Global & Regional Investment Bank League Tables – FY2013", Coalition, Ltd., PSI-Coalition-01-000018, at 14, 16.
[581] 2013 "OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013," at Tables 1 and 2, http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf.
[582] 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 013.
[583] Id. Goldman identified its key financial competitors as Morgan Stanley, JPMorgan, Barclays, and Deutsche Bank, while its non-financial competitors were Glencore, Vitol, Mercuria, BP, certain large utilities, and certain private equity funds. Id. at 016.

Global Commodities Revenues
Including Franchise and Principal Investments

	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013
Revenues	$1.4 billion	$3.1 billion	$2.9 billion	$3.3 billion	$3.4 billion	$2.2 billion	$2.0 billion	$1.0 billion	$1.3 billion*

*Partial year amount.
Source: 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group. Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 078.

The 2011 presentation stated that as of October 28, 2011: "Physical business now accounts for approximately 15-20% of total Franchise Revenues and is expected to increase."[584] The 2013 presentation stated: "Physical activity represents 6 - 17% of our 2012 global franchise revenues."[585]

(2) Historical Overview of Involvement with Commodities

Goldman first became involved with commodities when, in 1979, it registered with the CFTC as a "Futures Commission Merchant" (FCM) and received authorization to buy and sell futures and options on regulated exchanges.[586] Two years later, in 1981, it purchased J. Aron & Co., a commodities trading company that then specialized in precious metals and coffee, but soon began trading interest rate, foreign currency, and crude oil futures and options.[587] In 1991, Goldman Sachs launched the Goldman Sachs Commodity Index (GSCI), a mathematical construct that reflects the dollar value of a diversified basket of commodity futures, and allows investors to invest in commodities by buying and selling financial instruments whose values are

[584] 9/2013 presentation, "Global Commodities & Global Special Situations Group," prepared by Goldman Sachs, FRB-PSI-624274 - 295, at 279.
[585] 9/2013 "Global Commodities & Global Special Situations Group[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 082.
[586] See Goldman Sachs & Co. FCM information, National Futures Association (NFA) Background Affiliation Status Information Center (BASIC) website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=uZSsBZcBKLE%3d&rn=Y. For more information on Futures Commission Merchants, see NFA "Glossary," http://www.nfa.futures.org/basicnet/glossary.aspx?term=futures+commission+merchant (defining FCM as "[a]n individual or organization which solicits or accepts orders to buy or sell futures or options contracts and accepts money or other assets from customers in connection with such orders. Must be registered with the Commodity Futures Trading Commission."). The OCC authorized banks to become commodity exchange members as early as 1975, according to an unpublished letter cited in OCC Interpretative Letter No. 380 (12/29/1986), reprinted in Banking L. Rep. CCH ¶ 85, 604, PSI-OCC-01-000046-061. See also 4/12/2010 Permissible Securities Activities of Commercial Banks Under the Glass-Steagall Act (GSA) and the Gramm-Leach-Bliley Act (GLBA)," prepared by Congressional Research Service, http://assets.opencrs.com/rpts/R41181_20100412.pdf, at 10-11, footnote 54.
[587] See also10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 013. See also 6/18/2009 "Goldman Sachs Permissibility Study Follow-Up-Commodities," FRB-PSI-200961-979, at 962 (explaining that J. Aron & Co. is registered with FERC to sell power at market based rates).

linked to the index.[588] The Goldman Sachs Commodity Index led to an explosion in commodity index trading as well as increased futures trading.[589]

According to Goldman, by 1997, operating as a securities and commodities firm and not as a bank, it was trading in physically settled contracts in base metals, such as aluminum, lead, nickel, and zinc.[590] Goldman reported to the Federal Reserve that it was doing the same for contracts involving energy commodities, including crude oil, natural gas, gasoline, heating oil, and jet fuel;[591] and for agricultural products, including wheat, corn, coffee, cocoa, soybeans, and sugar.[592] In addition, Goldman indicated that it was engaging in physically settled trades in "power" through a "joint venture with Constellation Energy."[593] Goldman also told the Federal Reserve that, by 1997, it had owned or operated an oil refinery with related pipeline and storage infrastructure, an oil and gas marketing and distribution company, an upstream oil and gas producer, and a fertilizer producer.[594]

Cogentrix Acquisition. In 2003, Goldman purchased Cogentrix Energy, a company which developed and operated power plants and had ownership interests in 24 different power related facilities.[595] That acquisition represented one of Goldman's earliest forays into electrical power generation.[596] By 2011, Goldman had sold 80% of the Cogentrix portfolio for a gain of more than $1.6 billion.[597] But it still retained two coal fired power plants in Florida and Virginia; and a natural gas burning plant in San Diego.[598] In addition, it had diversified into renewable energy, taking ownership interests in eight hydroelectric and two wind generation facilities in Turkey, a solar power plant in California, and a photovoltaic solar power facility under construction in Colorado.[599]

By 2008, Goldman had expanded its commodities activities still further. In a list prepared for the Federal Reserve, Goldman indicated that, in 2008, it owned or operated a carbon aggregator, bio-diesel refinery, ethanol producer, and liquefied natural gas developer.[600] It had

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[588] See, e.g., "A Brief History Of Commodities Indexes," ETF.com, Adam Dunsby and Kurt Nelson (4/12/2010), http://www.etf.com/publications/journalofindexes/joi-articles/7451-a-brief-history-of-commodities-indexes.html.
[589] In 2007, Goldman sold the index to Standard & Poors, and it is now known as the S&P GSCI. See, e.g., "Goldman Sachs selling popular commodity index." Market Watch. (2/6/2007). http://www.marketwatch.com/story/goldman-sachs-selling-popular-commodity-index-to-sp.
[590] 5/26/2011 "Questions from the Federal Reserve on 4(o) Commodities Activities," prepared by Goldman, at FRB-PSI-200600 - 610.
[591] Id. at 600.
[592] Id. at 601.
[593] Id.
[594] Id.
[595] 10/20/2003 Goldman Sachs press release, "Goldman Sachs to Purchase 100% of Cogentrix," http://www.goldmansachs.com/media-relations/press-releases/archived/2003/2003-10-20.html.
[596] Subcommittee briefing by Goldman (9/5/2014).
[597] 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 029.
[598] Id.
[599] Id.
[600] 5/26/2011 "Questions from the Federal Reserve on 4(o) Commodities Activities," prepared by Goldman, at FRB-PSI-200600 - 610, at 601.

also become engaged in shipping vessels and mining coal.[601] In addition, Goldman began trading aluminum alloy, steel, coal, and liquefied natural gas.[602]

Bank Holding Company Status. As indicated earlier, in September 2008, in the midst of the financial crisis, Goldman became a bank holding company. In its expedited application filed with the Federal Reserve, Goldman explicitly invoked Section 4(o) of the Gramm-Leach-Bliley Act as legal authority to "grandfather" its existing commodities activities, that otherwise would not be permitted for a financial holding company.[603]

Constellation Acquisition. After its conversion to a bank holding company, Goldman continued to expand its physical commodity activities.[604] In 2009, according to a Goldman presentation to the Federal Reserve, Goldman purchased over 3,000 trading assets involving U.K., French, and German power and U.K. natural gas; as well as about 60 coal contracts, 20 time and voyage freight agreements, and 900,000 pounds of uranium ore from Constellation Energy, a U.S. utility and trading business.[605] Included in that acquisition was Nufcor International, a uranium trading company which stored and traded uranium ore in various stages of enrichment, as further described below. A later Federal Reserve examination report noted that, by the end of 2009, Goldman's physical commodity inventories included $258 million in oil products, $207 million in natural gas, $140 million in coal, and $3 billion in metals.[606]

As the Federal Reserve began to consider whether it should take a closer look at financial holding company involvement with physical commodities, an initial analysis contained this depiction of Goldman:

> "[Goldman Sachs] is one of the largest players in the commodities market and the business has been a material driver of revenue for the firm. ... Goldman's commodities business is active in the physical markets, in terms of trading, transporting, and storing physical commodities as well as owning power generation and other physical assets."[607]

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[601] Id.

[602] Id. at 600.

[603] 9/21/2008 "Confidential Application to the Board of Governors of the Federal Reserve System by The Goldman Sachs Group, Inc. and Goldman Sachs Bank USA Holdings LLC," FRB-PSI-303638 - 662. at 649, 661. Goldman wrote: "[A]fter becoming an FHC [financial holding company], Goldman will continue to operate its existing commodity trading business pursuant to the grandfather exception in Section 4(o) .... Goldman Sachs understands Section 4(o) to permit it to retain all its existing commodity-related businesses and activities because Goldman Sachs was engaged. prior to September 30, 1997, in the trading. sale, and investment in commodities and underlying physical properties that were not permissible for BHCs [bank holding companies] on that date. The Section 4(o) exemption does not require that a company have been engaged prior to September 30. 1997 in all the activities that it seeks to grandfather under Section 4(o) at the time the company becomes an FHC: rather, it only requires that the company have been engaged prior to that date in commodity-related activities that were not permissible for a BHC in the United States on that date. Goldman meets this test, as well as the 5% of total consolidated assets test in Section 4(o)(2)." Id. at 648 - 649.

[604] See 3/2010 "Global Commodities Principal Investments[:] Commodities Principal Investments," FRB-PSI-602243 - 274.

[605] See 2/2010 "Federal Reserve Bank of New York Discovery Review: Global Commodities" prepared by Goldman,FRB-PSI-601685 - 713, at 698.

[606] 4/8/2010 "Global Commodities Discovery Review," FRB-PSI-200516-585, at 523.

[607] Undated but likely 2010 "Scope Discovery Review Memo[:] Goldman Sachs Group Commodities," prepared by FRBNY examiners, FRB-PSI-200511 - 515, at 511 [sealed exhibit].

Additional Acquisitions. Goldman continued to expand its physical commodity activities throughout 2010. One of its acquisitions was Metro International Trade Services, the global metals warehousing business discussed further below.[608] Another was its purchase of a natural gas trading book from Nexen Inc., a Canadian natural gas business that reportedly bought and sold about 6 billion cubic feet of gas per day and managed more than 50 billion cubic feet of gas storage capacity.[609] A third acquisition was taking ownership of a coal mine and related assets in Colombia, as discussed in more detail below.[610]

Goldman disclosed to the Federal Reserve that, by 2010, Goldman's holdings included crude oil and natural gas exploration and production efforts in the North Sea, Central Asia, and North Africa; bulk carrier shipping through a joint-venture headquartered in Europe and another in Japan; and a coal mine in Australia.[611] According to Goldman, by then it was also trading physical palm oil, rubber, and asphalt.[612]

A 2011 presentation by Goldman to its Board of Directors provided these "[e]xamples of physical client activity": supplying jet fuel to Delta and Qatar airlines; supplying crude oil feedstock to Independent Refiner Alon and then purchasing the refined products; and supplying coal to Utility Drax.[613] It also stated: "We expect a larger increase in Physical activity in Growth Markets relative to Developed Markets."[614] The last page of the presentation stated that Goldman would be able to attribute a high valuation to GS Commodities "if the business was able to grow physical activities, unconstrained by regulation and integrated with the financial activities."[615]

In 2011, Goldman also reported to the Federal Reserve that it provided risk management services to clients involving various types of commodities, including crude oil and refined products, power and natural gas, coal, freight, emissions and iron ore, base and precious metals, index products, and agricultural products.[616] Goldman indicated that, in November 2011, it had

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[608] See 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 014, 027.
[609] Id. at 014, 022. See also, e.g., "Goldman expands in commods with Nexen unit buy," Reuters, Joe Silha and Jeff Jones (5/14/2010), http://www.reuters.com/article/2010/05/14/us-goldman-nexen-naturalgas-idUSTRE64D53120100514.
[610] See 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 028.
[611] 3/2010 "Global Commodities Principal Investments[:] Commodities Private Equity Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-602243 - 274, at 247. See also "A Shuffle of Aluminum, but to Banks, Pure Gold," New York Times, David Kocieniewski (7/20/2013), http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?ref=business; 07/23/2013 Goldman Sachs press release, "Goldman Sachs on Aluminum and Physical Commodities," http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-23-13.html.
[612] 5/26/2011 "Questions from the Federal Reserve on 4(o) Commodities Activities," FRB-PSI-200600 - 610, at 600.
[613] 10/28/2011 "Global Commodities[:] Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-700011 - 030, at 019.
[614] Id., at 021.
[615] Id. at 030.
[616] 11/2011 "Global Commodities Business Overview," FRB-PSI-201176 - 189, at 177.

over 1,000 active clients in its commodities business.[617] Those clients included producers, consumers, industrial users, central banks, pension funds, wealth managers, and other financial institutions,[618] with corporate clients accounting for about 45% of its global commodities clients.[619] In 2011, the Federal Reserve estimated that Goldman had physical commodity assets worth $26 billion.[620]

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, Goldman was one of the ten banks it examined in detail. Goldman was also featured in the internal Summary Report prepared by the Federal Reserve's Commodities Team summarizing the findings of the special review.[621]

The nonpublic 2012 Summary Report described Goldman's wide-ranging physical commodity activities. They included Goldman's acquisition of Cogentrix, with its ownership interests in over 30 power plants;[622] direct ownership of four tolling agreements with other power plants;[623] direct ownership of Metro, with 84 metal warehouses around the world;[624] the Colombian coal mines and related assets;[625] as well as the uranium trading business.[626] The 2012 Summary Report also noted that Goldman and JPMorgan together had a "total of 20-25 ships under time charters or voyages transporting oil [and] Liquefied Natural Gas."[627]

In addition to surveying the extent of Goldman's physical commodity activities, the 2012 Summary Report by the Federal Reserve Commodities Team identified multiple concerns with those activities. One concern was that Goldman had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that Goldman's catastrophic risk valuation methodology for its power plants was to use "simply the current value of its most valuable power plant," with no provision for potential expenses stemming from loss of life, worker disability, facility replacement, or a "failure to deliver electricity under contract."[628] At another point, the 2012 Summary Report compared the level of Goldman's capital and insurance reserves against estimated costs associated with "extreme loss scenarios," and found that "the potential loss exceeds capital and insurance" by $1 to $15 billion.[629] If

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[617] Id.
[618] Id.
[619] Id. at 862.
[620] 2011 "Work Plan for Commodity Activities at SIFIs," prepared by FRBNY Commodities Team, FRB-PSI-200465 - 476, at 465 [sealed exhibit].
[621] See 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by FRBNY Commodities Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510 [sealed exhibit].
[622] Id. at 485.
[623] Id.
[624] Id. at 486.
[625] Id.
[626] Id.
[627] Id.
[628] Id. at 494.
[629] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

Goldman were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

In 2013, when the Subcommittee asked Goldman about its physical commodity activities, the financial holding company provided information that, consistent with the Summary Report, illustrated its far-reaching commodity operations. Goldman reported trading in the physical commodities of aluminum, copper, gold, lead, nickel, palladium, platinum, silver, tin, zinc, coal, crude oil, heating oil, gasoline, jet kerosene, and natural gas.[630] Goldman also reported maintaining substantial inventories of many physical commodities. At the end of 2011 (the latest year in which complete data was provided to the Subcommittee), those inventories included approximately 231,000 metric tons of aluminum, 37,000 metric tons of copper, 3,000 metric tons of nickel, 2.2 million barrels of crude oil, 245,000 barrels of heating oil, 2 million barrels of jet kerosene, and 106.5 million BTUs of natural gas.[631] In addition, Goldman has continued to own and operate coal mines in Colombia, supply uranium to power plants, and operate a global metals warehouse business.[632]

Continuing Physical Commodities. Although several other bank holding companies have begun to exit their physical commodity activities, Goldman executives have indicated that Goldman remains committed to commodities as a core business.[633] In September 2013, Goldman CEO Lloyd Blankfein described commodities as a "core, strategic business" for the bank.[634] In an October 2013 earnings conference call, in response to questions from analysts, Goldman's Chief Financial Officer Harvey Schwartz described commodities as an "essential business for our clients," and stated: "We have no intention of selling our [commodities] business."[635]

Despite those public statements, in the last two years, Goldman has sold or attempted to sell certain commodity assets. In 2012, it sold Cogentrix Energy and essentially exited the business of operating power plants.[636] In 2013, it signaled that Metro International and its warehouses were up for sale, although it has yet to conclude a transaction.[637] In 2014, Goldman

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[630] 2/12/2013 Goldman Response to Subcommittee Questionnaire, GSPSICOMMODS00000001-R - 003-R.
[631] See 2/12/2013 Goldman Response to Subcommittee Questionnaire, GSPSICOMMODS00000001-R - 003-R, at 003-R.
[632] See discussion below.
[633] See "Goldman Sachs Stands Firm as Banks Exit Commodity Trading," Bloomberg , Ambereen Choudhury (4/22/2014), http://www.bloomberg.com/news/2014-04-22/goldman-sachs-stands-firm-as-banks-exit-commodity-trading.html.
[634] "As rivals fade, Goldman Sachs stands firm on commodities," Reuters, Jonathan Leff and Dmitry Zhdannikov, (12/6/2013), http://www.reuters.com/article/2013/12/06/us-banks-commodities-idUSBRE9B50S720131206. See also "Goldman Serves Crucial Physical Commodities Role, Blankfein Says," Bloomberg, Michael J. Moore (9/18/2013), http://www.bloomberg.com/news/2013-09-18/goldman-serves-crucial-physical-commodities-role-blankfein-says.html.
[635] "Goldman Q3 commodity revenue down 'significantly' on Q2" (10/17/2013), Reuters, http://www.reuters.com/article/2013/10/17/goldman-results-commodities-idUSL1N0I70OD20131017.
[636] 9/6/2012 Carlyle Group press release, "The Carlyle Group to Acquire Cogentrix Energy Assets and Power Project Development and Acquisition Platform," http://www.carlyle.com/news-room/news-release-archive/carlyle-group-acquire-cogentrix-energy-assets-and-power-project-devel.
[637] Subcommittee briefing by Goldman (7/17/2014); "Goldman explores sale of Metro metals warehouse business," Reuters, Josephine Mason and David Sheppard (4/11/2013), http://www.reuters.com/article/2013/04/11/us-goldman-metro-idUSBRE93A0IO20130411.

announced that Nufcor and its uranium trading business were for sale.[638] Goldman told the Subcommittee that it has yet to receive an acceptable bid for Nufcor and has decided instead to wind down the business which, due to long-term uranium supply contracts, will require Goldman to continue supplying uranium to one power plant until 2018.[639] Goldman told the Subcommittee it is also considering selling its Colombian coal mines.[640] Despite those statements and actions to sell or shut down certain aspects of its physical commodity activities, Goldman informed the Subcommittee that it intended to remain active in the commodities business and will seek to continue its physical commodity activities.[641]

[638] "Goldman puts 'for sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014), http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211.
[639] Subcommittee briefing by Goldman (9/5/2014).
[640] Id.
[641] Id.

B. Goldman Involvement with Uranium

For the past five years, Goldman Sachs has owned, marketed, and traded physical uranium and related financial instruments. Goldman initiated its physical and financial trading of uranium in 2009, a year after it became a bank holding company, by acquiring a longtime industry leader in the uranium markets, Nufcor International Ltd. Goldman claimed that it had legal authority to engage in uranium trading under the Gramm-Leach-Bliley "grandfather" clause. Since no Nufcor employees came to Goldman as part of the sale, Goldman employees ran the business. Within three years of purchase, Goldman increased the volume of Nufcor's uranium trading tenfold, from an annualized amount of about 1.3 million pounds to 13 million pounds, and increased its long-term uranium supply contracts from two to nine utilities with nuclear power plants. Goldman stored its physical uranium in at least six storage facilities in the United States and abroad, owned by unrelated parties.

Goldman's uranium-related activities, which are expected to continue until at least 2018, raise multiple concerns, including insufficient capital and insurance to protect against a catastrophic event, unfair competition, and conflicts of interest arising from controlling physical uranium supplies while trading uranium financial instruments.

(1) Background on Uranium

Uranium (U) is a dense, weakly radioactive, naturally occurring metal[642] that is most commonly used for power generation and nuclear weapons. It is found in rocks and ores that make up approximately three percent of the earth's crust, and so is not considered a rare metal.[643]

In its natural form, uranium is found in three different isotopes: Uranium-238, Uranium-235, and Uranium-234, with U-235, the isotope used for nuclear enrichment, comprising only about 0.7 percent of natural uranium.[644] To be useful for power generation or military purposes, the percentage of U-235 in a given sample needs to be increased significantly. Power plants need uranium to contain about 5% U-235,[645] while military weapons require uranium to contain at least 90%.[646]

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[642] 10/1/2012 "Radiation Protection[:] Uranium," U.S. Environmental Protection Agency website, http://www.epa.gov/radiation/radionuclides/uranium.html.

[643] 12/2008 "New Product Memorandum [:] Uranium Trading," prepared by Goldman, FRB-PSI-400039 - 052, at 049 (hereinafter "12/2008 Goldman New Product Memorandum on Uranium Trading"); Being Nuclear: Africans and the Global Uranium Trade, (The MIT Press, 2012) (hereinafter, "Being Nuclear"), Gabrielle Hecht, at 51 ("[U]ranium wasn't confined to particular geological formations or geographical locations. The stuff was everywhere.").

[644] 10/1/2012 "Radiation Protection[:] Uranium," U.S. Environmental Protection Agency website, http://www.epa.gov/radiation/radionuclides/uranium.html.

[645] See 10/1/2014 "Uranium Enrichment," U.S. Nuclear Regulatory Commission website, http://www.nrc.gov/materials/fuel-cycle-fac/ur-enrichment.html; See also 3/2014 "What is Uranium? How Does it Work?," World Nuclear Association website, http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/.

[646] See 3/2014 "What is Uranium? How Does it Work?," World Nuclear Association website, http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/.

To increase the concentration of U-235, uranium must go through a fuel processing cycle. The process begins when the uranium ore is refined and processed to generate triuranium octaoxide (U_3O_8 or U3O8), otherwise known as "yellowcake."[647] U3O8 is "an inert, stable, insoluble oxide."[648] In the next step of the fuel processing cycle, by removing impurities and combining it with fluorine, the U3O8 is converted into uranium hexafluoride (UF_6 or UF6). The only conversion plant currently operating in the United States is located in Metropolis, Illinois.[649]

In the next step in the process, the UF6 is enriched to increase the level of U-235.[650] The enriched UF6 is then solidified and processed into uranium oxide (UO_2), which can be used to manufacture nuclear fuel rods for power plants.[651] This multi-step enrichment process was depicted in the following chart included in a Goldman internal memorandum advocating the financial holding company's involvement with uranium trading:

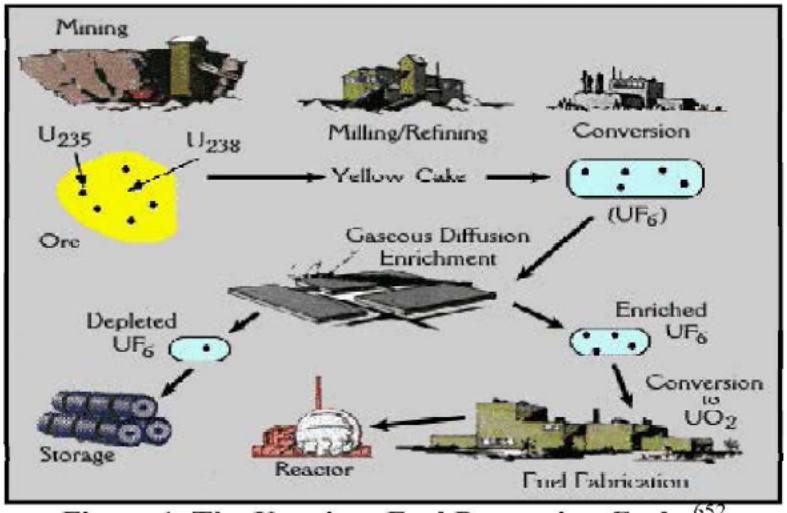


Figure 1. The Uranium Fuel Processing Cycle.[652]

Health Risks. The health-related risks of uranium itself as well as from the fuel processing cycle can be significant. While uranium in its natural form is not considered a harmfully radioactive substance, it is toxic after processing.[653] Exposure to too much uranium has been found to increase cancer risk and cause liver damage.[654] Further, various stages of uranium processing involve strong acids and produce extremely corrosive chemicals that could cause fires or explosions.[655]

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[647] 12/2008 "New Product Memorandum," prepared by Goldman, FRB-PSI-400039 - 052, at 049.
[648] Id.
[649] Id. (noting other conversion plants in Canada, France, United Kingdom, China, and Russia).
[650] Id.
[651] Id.
[652] Id.
[653] Id. at 050.
[654] 10/1/2012 "Radiation Protection[:] Uranium," U.S. Environmental Protection Agency website, http://www.epa.gov/radiation/radionuclides/uranium.html.
[655] 5/21/2014 "Uranium Conversion," U.S. Nuclear Regulatory Commission website, http://www.nrc.gov/materials/fuel-cycle-fac/ur-conversion.html.

Regulatory Framework. The regulatory landscape for owning and processing uranium varies as uranium is enriched and moves closer to useable form for fuel or weapons. In the United States, a person may not take title to or possession of, or import or export uranium, without obtaining a general or specific license from the U.S. Nuclear Regulatory Commission (NRC).[656] In 1980, the NRC issued a regulation which automatically grants a "general" license, without any application requirement, to any U3O8 or un-enriched UF6 title holder who does not physically possess, move, or process the uranium.[657] That regulation effectively allows uranium owners to buy and sell the uranium without having to obtain a specific U.S. license, so long as they do not take physical possession of the metal. At the same time, the NRC has imposed significant licensing requirements on parties involved with the physical transport, handling, and processing of uranium.[658]

Other countries have different regulatory requirements regarding the storage, transport, enrichment, and trading of uranium. An ongoing regulatory issue is whether uranium should be treated as nuclear material requiring careful monitoring and trading restrictions, or a profit-generating commodity freely transferable among parties interested in buying and selling it.[659]

Uranium Markets. According to the World Nuclear Association, over 400 nuclear power plants scattered over 30 countries use uranium to generate about 12% of the world's power supply.[660] Those nuclear power plants have created a market for about 160-170 million pounds of uranium oxide concentrate per year.[661] To meet that demand, uranium is usually purchased by utilities or power plants directly from the producers using long term supply contracts.[662] The prices for those contracted deliveries are usually linked to the spot prices of uranium at the time of delivery.[663]

Uranium-related trading can occur in a number of ways, including trading in: (1) physical uranium at various stages of its life cycle; (2) uranium financial instruments, including futures, forwards, options, or swaps; (3) certain rights related to uranium, such as "Conversion

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[656] See Section 62 of the Atomic Energy Act of 1954, P.L. 83-703, codified at 42 U.S.C. §2011 ("Unless authorized by a general or specific license issued by the Commission, which the Commission is hereby authorized to issue, no person may transfer or receive in interstate commerce, transfer, deliver, receive possession of or title to, or import into or export from the United States any source material after removal from its place of deposit in nature … ").

[657] 10 C.F.R. §40.21, 45 Fed. Reg. 65531, (Oct. 3, 1980) ("A general license is hereby issued authorizing the receipt of title to source or byproduct material, as defined in this part, without regard to quantity. This general license does not authorize any person to receive, possess, deliver, use, or transfer source or byproduct material.").

[658] Subcommittee briefing by the Nuclear Regulatory Commission (9/23/2014).

[659] See, e.g., Being Nuclear: Africans and the Global Uranium Trade, (The MIT Press, 2012) (hereinafter, "Being Nuclear"), Gabrielle Hecht, at 31-36, 56-57.

[660] 3/2014 "What is Uranium? How Does it Work?," World Nuclear Association website, http://www.world-nuclear.org/info/Nuclear-fuel-cycle/introduction/what-is-Uranium--How-Does-it-Work-/.

[661] 4/2014 "Uranium Markets," World Nuclear Association website, http://www.world-nuclear.org/info/nuclear-fuel-cycle/uranium-resources/uranium-markets/ (stating 170 million pounds).

[662] Id.

[663] Id. Because of the extensive amount of processing required to make uranium useful, only about one third of the cost of nuclear fuel for a power plant is the cost of the original uranium. Id. Further, the "spot" prices for uranium are not based on actual transactions, but are instead published by survey services that are integrally involved in these markets. See 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 052.

Service Certificates" or "Separative Work Units"; and (4) shares of uranium-related companies or an index that tracks uranium-related companies' stock prices.[664]

Uranium is commonly traded as a physical commodity at two stages in its life cycle: U3O8 (triuranium octoxide) and as UF6 (uranium hexafluoride).[665] The total volume of those two physical markets is relatively small.

With respect to uranium financial instruments, CME Group Inc. lists a standardized uranium-related futures contract for 250 pounds of U3O8.[666] This financially settled contract is traded on the CME Globex and CME ClearPort trading platforms, and is linked to prices provided by Ux Consulting Company, LLC.[667] It was established and began trading for the first time on May 6, 2007.[668] In recent years, the uranium futures market has had relatively few participants, the U3O8 contract has rarely traded, and open interest has generally remained relatively low.[669]

Uranium can also be traded through two unique financial instruments tied to its processing cycle. The right to "convert" U3O8 into UF6, represented by a U3O8 "Conversion Services Certificate," can be traded on an over-the-counter basis.[670] These certificates grant the holder a place in line to convert U3O8 to UF6 at a conversion facility.[671] Similarly, a "Separative Work Unit," representing the "right" to enrich uranium at a particular enrichment facility by a particular amount, can also be traded over the counter.[672]

Finally, although more removed, investors seeking to profit from changes in uranium prices may invest in a company engaged in the uranium business or in one or more exchange traded funds that track stocks of companies involved in uranium.[673]

In recent years, the uranium market has experienced significant price fluctuations, based on massive swings in market sentiment towards nuclear power and technology changes for alternative sources of energy. Price swings in the U3O8 spot market illustrate the price variance and increased volatility in recent years.

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[664] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 030 - 040.
[665] Id.
[666] See "UxC Uranium U3O8 Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/metals/other/uranium_contract_specifications.html.
[667] Id.
[668] When it first began trading, the futures contract was on the New York Mercantile Exchange (NYMEX) Clear Port and CME Globex platforms. See "CME/NYMEX Uranium Futures (UX) Contract[:] CME/NYMEX Partners with Ux Consulting to Offer Uranium Futures Contracts," Ux Consulting Company, LLC website, http://www.uxc.com/data/nymex/NymexOverview.aspx.
[669] There are frequently zero reported trades per day. For example, for the week of September 9-16, 2014, only one trade was reported, involving 50 contracts. See "UxC Uranium U3O8 Volume," CME Group website, http://www.cmegroup.com/trading/metals/other/uranium_quotes_volume_voi.html.
[670] Subcommittee briefing by Goldman Sachs (9/5/2014).
[671] Id.
[671] Id.
[672] Id.
[673] For example, an investor could invest in the Global X Uranium ETF, which tracks the Solactive Global Uranium Index and is traded on NYSE Arca under symbol URA. See "Global X Uranium ETF," Global X Funds website, http://www.globalxfunds.com/URA.

Ux U3O8 Price - Full History (Spot U3O8-Full)



*Chart prepared by Ux Consulting Company, LLC[674]

This price history reflects fundamental changes in the uranium market. In particular, in the mid-2000s, a renewed focus on global warming[675] led to widespread speculation that nuclear power would expand, leading to an increase in uranium prices. U3O8 spot market prices peaked at about $135 per pound, at nearly the same time as the U3O8 futures product began trading for the first time in May 2007.[676] Demand for nuclear power sources then waned, as huge stores of relatively inexpensive natural gas became available as an alternative energy source. Just as prices began to recover amid a renewed push for low carbon dioxide emission energy sources to counter global warning, the nuclear disaster occurred at the Fukushima Diachii nuclear power plant in Japan in March 2011. "The accident … called nuclear power's prospects into question and the spot price [of U3O8] has declined dramatically since that time."[677] Governments shut down nuclear power plants,[678] postponed plans for new ones, and began to shift to other power sources.[679] From a peak of about $135 per pound in 2007, U3O8 spot market prices have since fallen to about $40 today.

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[674] Ux Consulting Company, LLC, http://www.uxc.com/review/UxCPriceChart.aspx?chart=spot-u3o8-full.
[675] In May 2006, the movie, "An Inconvenient Truth" was released, for example, which significantly raised awareness of global warming. See "'An Inconvenient Truth': Al Gore's Fight Against Global Warming," New York Times, Andrew Revkin (5/22/2006), http://www.nytimes.com/2006/05/22/movies/22gore.html?pagewanted=all.
[676] See, e.g., "Uranium stocks rally in advance of NYMEX futures trading," U3O8.biz, Robert Simpson (5/3/2007), http://www.u3o8.biz/s/MarketCommentary.asp?ReportID=184497&_Title=Uranium-stocks-rally-in-advance-of-NYMEX-futures-trading ("The NYMEX will list a uranium futures contract on Monday, May 7, as the energy and metals exchange looks to capitalize on surging interest in the nuclear fuel."); Being Nuclear, at 329.
[677] 2014 Review, prepared by Energy Resources International, Inc. for the U.S. Department of Energy Office of Nuclear Energy, at 5, http://www.energy.gov/sites/prod/files/2014/05/f15/ERI%20Market%20Analysis.pdf.
[678] Id. at 4 (noting Japan temporarily shut down some nuclear facilities while Germany permanently shut facilities).
[679] See, e.g., "Uranium Market," Uranium Participation Corporation website, http://www.uraniumparticipation.com/s/Uranium_Market.asp (explaining current lower uranium prices).

Because the uranium market is volatile and has relatively few participants, it poses significant risks for those who trade in it. As one website discussing uranium investments warned: "Uranium futures carry a double whammy of being thinly traded and very volatile."[680]

(2) Background on Nufcor

The Nuclear Fuels Corporation of South Africa (Nufcor), the predecessor to Nufcor International Ltd., was formed by South African gold mining companies in the 1960s, to process and market uranium to the nascent nuclear power industry.[681] The companies had previously sold the bulk of the uranium obtained as a byproduct of their gold mining to the United States and United Kingdom for military purposes.[682]

The creation of Nufcor marked a significant shift in market focus away from military sales towards commercial power plants, and Nufcor became a supplier of uranium products used to produce nuclear fuel rods for nuclear power plants around the world.[683] Among other countries, in the 1970s, Nufcor sold enriched uranium to Iran.[684]

In 1999, Nufcor incorporated a new subsidiary in London, Nufcor International Ltd., to undertake trading in nuclear fuel cycle products and services. Nufcor also created an investment adviser, Nufcor Capital Ltd., which managed an investment fund, Nufcor Uranium Ltd., for uranium-related investments.[685] By the mid-2000s, Nufcor and its related affiliates were actively engaged in owning physical uranium, trading financial products related to uranium, and advising investors on uranium-related investments.[686]

On June 26, 2008, Nufcor was bought by the Constellation Energy Group, a U.S. firm that operated several nuclear power plants, for about $103 million.[687]

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[680] 10/2/2014 "How to Invest in Uranium," Demand Media, Karen Rogers, http://finance.zacks.com/invest-uranium-5543.html.

[681] "Goldman puts 'for sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014). http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211.

[682] See Being Nuclear: Africans and the Global Uranium Trade, (The MIT Press, 2012) (hereinafter, "Being Nuclear"), Gabrielle Hecht, at 68, 89.

[683] See Being Nuclear, at 68 - 69, 72.

[684] 11/16/2014 email from Professor Gabrielle Hecht to Subcommittee; "Goldman puts 'or sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014). http://www.reuters.com/article/2014/02/11/goldman-uranium-idUSL2N0LC0ZV20140211.

[685] 9/19/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, Exhibit A, at GSPSICOMMODS00046240.

[686] See 2008 Form 10-K for Constellation Energy Group, Inc., filed with the SEC on 2/27/09, at 152 - 153, http://www.sec.gov/Archives/edgar/data/9466/000104746909002000/a2190570z10-k.htm.

[687] Id. at 1, 152. The two owners of Nufcor at the time were AngloGold Ashanti and FirstRand International. Constellation Energy's purchase of Nufcor led to speculation in the press that it "could trigger a trend where utilities start to trade uranium as a commodity." "Constellation poised to buy Nufcor Intl," Mineweb, Anna Stablum (5/7/2008), http://www.mineweb.com/mineweb/content/en/mineweb-fast-news?oid=52522&sn=Detail.

(3) Goldman Involvement with Physical Uranium

Goldman's involvement with physical uranium began with a 2008 proposal by GS Commodities to get into the business of trading physical and financial uranium products and processing rights.[688] In 2009, Goldman purchased Nufcor, and expanded its business over the next five years, resulting in Goldman's buying millions of pounds of uranium, controlling inventories of physical uranium at storage facilities in the United States and Europe, and becoming a long term supplier of physical uranium to nine utilities with nuclear power plants. Because no employees who conducted Nufcor's business joined Goldman after the sale, Goldman employees ran the business. In 2014, for a variety of reasons, Goldman decided it would sell Nufcor or wind it down. It currently has contractual obligations to supply physical uranium to one nuclear power plant until 2018.

(a) Proposing Physical Uranium Activities

In December 2008, three months after Goldman became a bank holding company, Goldman's commodities group, GS Commodities, sought approval from senior Goldman management to expand its physical commodity activities to include "trading physical and financial Uranium products and processing rights."[689] As a way of initiating this activity, GS Commodities advocated acquiring Nufcor International Ltd., which was "a recognized name in the uranium industry,"[690] and which was then owned by Constellation Energy Group.[691]

The proposal, which was sponsored by Goldman's Global Head of Commodities, Isabelle Ealet, was memorialized in a 2008 "New Product Memorandum."[692] The memorandum was submitted to Goldman's European Federation New Products Committee for approval.[693] The New Products Committee, which included approximately a dozen Goldman executives, focused on ensuring that Goldman had the ability to support the proposed new activities from compliance, legal, tax, and operational perspectives.[694] The New Product Memorandum detailed Goldman's understanding of Nufcor's business activities, highlighted some of the associated risks, and ultimately recommended purchasing the company.[695]

Describing Nufcor's Business. According to the Goldman analysis in the New Product Memorandum, Nufcor's business model was focused around four distinct activities involving the trading of physical and financial uranium products, the marketing of uranium ore supplied by

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[688] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.
[689] Id. Goldman told the Subcommittee that while it may have previously traded in uranium to a minimal degree, creating a dedicated business line to conduct uranium transactions in the financial and physical markets was a major change in the nature, scope, and volume of its uranium activities, and necessitated a new product presentation and approval. Subcommittee briefing by Goldman Sachs (9/5/2014).
[690] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.
[691] Constellation Energy is a longtime operator of nuclear power plants in the United States. See 2008 Form 10-K for Constellation Energy Group, Inc., filed with the SEC on 2/27/09, http://www.sec.gov/Archives/edgar/data/9466/000104746909002000/a2190570z10-k.htm.
[692] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.
[693] Id.
[694] Subcommittee briefing by Goldman Sachs (9/5/2014).
[695] See 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052.

two mining companies, and advising on uranium-related investments.[696] Goldman described the four business activities as follows:

> (1) "Arbitrage across elements and processes in the uranium fuel cycle including time-spreads and inventory carry trades to capture contango differentials";[697]
> (2) "Speculation on individual elements and processes in the fuel cycle";[698]
> (3) "Fulfilment of Agency Agreements with two mining companies for the marketing and sale of U3O8";[699] and
> (4) "Provision of Advisory and Custodian services to Nufcor Capital Ltd, a closed-ended investment fund that buys and holds UF6 & U3O8."[700]

The Goldman analysis found that Nufcor International Ltd. traded a significant volume of physical and financial uranium-related products. Its trading activity included:

- 3.6 million pounds of physical U3O8 during 2008;
- 460,000 kilograms of physical UF6 during 2008;
- 1.3 million pounds of U3O8, using exchange based products and bilateral swap agreements during 2008;
- 760,000 kilograms of uranium in Conversion Service Credits (rights to convert U3O8 to UF6) during 2007; and
- 500,000 kilograms of uranium in Separative Work Units (rights to enrich UF6).[701]

In addition, the December 2008 Goldman analysis noted that Nufcor possessed a large inventory of physical uranium products which, in 2008, included:

- 1.15 million pounds of U3O8;[702]
- 200,000 kilograms of UF6; and
- Conversion Service Credits representing 770,000 kilograms of uranium.[703]

The Goldman analysis valued the entire portfolio at $47 million dollars, which included a physical uranium inventory worth $90 million, but also certain uranium forward positions that were then out of the money by $55 million.[704]

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[696] Id.
[697] Id. at 040. See also "Arbitrage," Investopedia.com, http://www.investopedia.com/terms/a/arbitrage.asp ("The simultaneous purchase and sale of an asset in order to profit from a difference in the price.").
[698] Id. According to the Goldman analysis, Nufcor then held inventories of U3O8 and UF_6, as well as uranium Conversion Service Credits which had been loaned to Honeywell, but were due to return to Nufcor in 2009. Id.
[699] Id. According to the Goldman analysis, Nufcor then had annual retainer and sales commission arrangements with Uranium One and with AngloGold Ashanti Ltd., the South African gold mining consortium. Id.
[700] Id.
[701] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 040.
[702] Id. This figure of 1.15 million pounds of U3O8 was contradicted a few pages later, at FRB-PSI-400046, where Goldman indicated that Nufcor had only about 623,000 pounds of U3O8, nearly 500,000 fewer pounds than first indicated at FRB-PSI-400040 in the same memorandum.
[703] Id.
[704] Id. A few pages later, however, the memorandum indicated that Nufcor had only about 623,000 pounds of U3O8, and its total physical uranium portfolio had an estimated value of only about $64 million. Id. at 046.

Identifying Key Nufcor Risks. In addition to describing Nufcor's business activities and current uranium holdings, the New Product Memorandum identified and analyzed a number of risks associated with taking on Nufcor's uranium-related activities.[705] They included valuation and market risks, liquidity risks, catastrophic event liability issues, compliance issues, regulatory risks, credit risks, inventory management concerns, trade reporting issues, and tax considerations.[706] The description of those risks informed senior Goldman management that the proposed uranium-related activities were high-risk. The key risks included the following.

Valuation Risks and Market Risks. A significant portion of the analysis in the New Product Memorandum focused on trade-related risks, including valuation risks, market risks, and the consequences of declining uranium prices.

The Goldman analysis warned that obtaining accurate valuations for uranium had a number of challenges. It stated that there was "no spot market or spot price marker" that an owner of uranium could use to determine daily uranium prices.[707] Instead, it found that weekly "spot" prices were published by two consulting firms based on "market sentiment and qualifying bids," rather than completed transactions.[708] The Goldman analysis stated that Goldman had not yet tested the "rigor/robustness" of those weekly price markers.[709] The Goldman analysis also found that there was "no exchange-traded commodity market for physical uranium products."[710] The absence of an active physical exchange market, again, made valuing uranium products more difficult than for other commodities, adding to the risk of holding the assets.

With respect to market risks, the Goldman analysis highlighted uranium's volatile prices. It stated that the "disconnect between [fair value] of physical inventory and the lack of [mark-to-market] on the forward positions may result in [profit and loss] volatility for the Uranium portfolio."[711] The Goldman analysis also highlighted Nufcor's then out-of-the-money net short position in uranium forwards, concluding that it could give rise to further losses if uranium prices declined.[712] Those financial instrument losses would be in addition to losses from the declining value of the physical uranium Nufcor also held.

Operational Risks. In addition to price volatility and valuation issues, the Goldman analysis identified a number of operational concerns related to physical uranium. One key issue was whether Goldman's existing systems could accurately track physical and financial uranium

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[705] Id. at 042.
[706] Id. at 043 - 048.
[707] Id. at 042.
[708] Id. Reliance on bids rather than completed transactions can result in inaccurate pricing and even abusive practices. For example, widespread manipulation of the London Interbank Offered Rates (LIBOR), benchmarks underpinning trillions of dollars in derivatives, was achieved in part through submissions of inaccurate and misleading bids, as opposed to actual transactions. See, e.g., 2/6/2013 U.S. Department of Justice press release, "RBS Securities Japan Limited Agrees to Plead Guilty in Connection with Long-Running Manipulation of LIBOR Benchmark Interest Rates," http://www.justice.gov/atr/public/press_releases/2013/292421.htm.
[709] 12/2008 Goldman New Product Memorandum on Uranium Trading, at FRB-PSI-400039 - 052, at 042.
[710] Id.
[711] Id. at 047.
[712] Id. at 045.

transactions, given the absence of standardized uranium trade documentation.[713] The memorandum indicated that trade capturing and reporting mechanisms would need to be developed so that uranium transactions could utilize Goldman's existing confirmation, settlement, and operations systems.[714] The Goldman analysis also noted that personnel would be needed to manage Nufcor's physical inventories.[715]

Another key issue raised in the memorandum was ensuring that Goldman could manage its positions through effective hedging. The Goldman analysis indicated that it might be difficult to hedge particular uranium positions due to the lack of robust trading in the futures market. For example, the analysis noted that uranium futures were so thinly-traded that Nufcor's 2008 open interest of 139,000 pounds of U3O8 futures was about 20% of the overall open interest in the product.[716] The memorandum warned that hedging significant exposures would be difficult due to the lack of many counterparties in the market, adding to the risk of holding uranium assets.

The New Product Memorandum also noted that the market was characterized by "long-term physical participants trading with each other," which could lead to significant informational disadvantages for new entrants, like Goldman.[717] Put another way, the memorandum indicated that it might be difficult for Goldman to fully understand the market at a given time, and that it could be more readily taken advantage of by other market participants with more experience trading uranium.

Credit Risks. In contrast to the operational risks, Goldman found that the counterparty credit risks arising from a Nufcor acquisition were not significant.[718] The Goldman analysis noted that many of the counterparties in the uranium market were large multinational corporations or government-related entities, and tended to have strong credit.[719]

Goldman also evaluated the credit risks of the third party facilities where Nufcor stored its uranium.[720] The memorandum examined five companies with storage facilities: Cameco Corp.;[721] Comurhex;[722] ConverDyn;[723] EURODIF S.A.;[724] and USEC, Inc.[725] The memorandum

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[713] Id.
[714] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 047 - 048.
[715] Id. at 047. The memorandum observed that Goldman already had "experience of managing physical unallocated products for metals and coal," as well as products with different quality levels. such as coal with different sulfur content, suggesting that Goldman should also be able to manage the physical uranium inventory. Id.
[716] Id. at 042.
[717] Id.
[718] Id. at 045.
[719] Id.
[720] Id. at 046.
[721] Cameco Corp. is the largest U.S. uranium producer with mines in Wyoming and Nebraska. See "About," Cameco Corp. website. http://www.cameco.com/usa/.
[722] Comurhex is a subsidiary of AREVA, a French multinational group that specializes in nuclear power plants and owns a uranium conversion facility in France. See "The History of Comurhex Pierrelatte," AREVA website, http://www.areva.com/EN/operations-811/the-history-of-comurhex-pierrelatte-from-1959-to-the-comurhex-ii-project.html.
[723] ConverDyn is a partnership between affiliates of Honeywell and General Atomics, and has uranium storage facilities in Illinois. See "Our Business," ConverDyn website, http://www.converdyn.com/business/index.html; 10/2/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," at PSI-GoldmanSachs-21-000001 - 010.

expressed concern about USEC's credit profile,[726] and noted that Goldman would not want to add to that credit exposure if it were to acquire Nufcor.[727]

Regulatory Risks. Goldman next assessed the regulatory risks associated with an acquisition of Nufcor. The memorandum framed the issue as whether Nufcor's uranium activities: (1) were consistent with the laws governing all persons regarding uranium, and (2) would be permitted by its banking regulators.

The New Product Memorandum noted that "[u]ranium processing and storage (in all forms) is heavily regulated."[728] It briefly analyzed regulatory issues in the primary jurisdictions where Nufcor operated: the United States, Canada, France, and the United Kingdom, while also recognizing a need to analyze regulatory requirements in Germany and Sweden.[729] With respect to the United States, the memorandum stated that "holders of legal title to uranium ore concentrates and UF6 are required to be licensed,"[730] while also noting that, if Goldman were to conduct the business so that Goldman would not come into physical possession of uranium, own any storage facility, or transport any uranium, licensing would likely not be a problem.[731]

On the issue of whether Goldman would be permitted by its U.S. and U.K. banking regulators to engage in uranium-related trading, the memorandum concluded that, in the United States, the acquisition of Nufcor was "consistent" with the activities in which the firm was engaged at the time it became a bank holding company, and thus would be eligible for grandfathering under the Gramm-Leach-Bliley Act.[732] Goldman determined that it could treat physical uranium activities as a "grandfathered" activity despite having never before engaged in it. With respect to the United Kingdom, the Goldman analysis stated that the proposed uranium activities gave rise to no additional registration requirements with the U.K. Financial Services Authority.[733]

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[724] EURODIF S.A. is another AREVA subsidiary and owns a uranium enrichment facility in France. See AREVA website, "EURODIF S.A.: Uranium Enrichment," http://www.areva.com/EN/operations-792/eurodif-s-a-georges-besse-plant-uranium-enrichment.html. The U. S. Government and the United States Enrichment Corporation previously brought actions against EURODIF S.A. for "dumping" Separative Work Units in the United States. See United States v. EURODIF S.A., Case No. 07-1059 (U.S.), Opinion (1/26/2009), http://www.supremecourt.gov/opinions/08pdf/07-1059.pdf.

[725] USEC, Inc. was created by the U.S. Congress in the Energy Policy Act of 1992, later became a publicly-traded corporation. See "History," USEC website. http://www.centrusenergy.com/company/history.

[726] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 046.

[727] Id. Goldman's assessment of USEC's credit risk proved accurate, as USEC ultimately declared a Chapter 11 bankruptcy in early 2014. It is expected to emerge from that bankruptcy as a reorganized company under the name Centrus Energy Corp. in September 2014. See 9/5/2014 USEC press release. "Court Confirms USEC Inc. Plan of Reorganization," http://www.usec.com/news/court-confirms-usec-inc-plan-reorganization.

[728] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 042.

[729] Id. at 043 - 044.

[730] Id. at 043.

[731] Id. at 045. Goldman told the Subcommittee that it has not been required to obtain any specific license to engage in uranium trading or take ownership of physical uranium. Subcommittee briefing by Goldman Sachs (9/5/2014).

[732] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 044. The Goldman analysis also noted that uranium trading was "of a type" authorized by the Federal Reserve, since U3O8 futures contract had been approved by the CFTC for trading on exchanges. Id.

[733] Id. at 045.

Catastrophic Event Liability Risks. Still another set of key risks identified and discussed in the New Product Memorandum involved potential liability risks for Goldman in connection with a health, safety, or environmental disaster arising from the proposed uranium activities. The New Product Memorandum included a lengthy legal analysis focused on the potential liability of facility owners, facility operators, and the title holders of uranium.[734] It discussed the applicability of the Price Andersen Act which is triggered by the occurrence of a "nuclear incident," meaning nuclear material is released from a facility's boundaries.[735] It also discussed the possibility of lawsuits being brought in federal versus state courts. After enumerating a number of potential liability risks, the New Product Memorandum expressed confidence that Goldman would not be held liable in the event of a uranium-related event, so long as it was not the operator of any storage or transport facility involved and did not dictate how the facility should be operated.[736]

The New Product Memorandum's long list of the risks involved with buying and selling physical uranium – including valuation, market, operational, credit, regulatory, and catastrophic event risks – showed it was a high risk business. Despite the risks, a lack of prior uranium activities, its status as a bank holding company, and public pressure for banks to reduce risks to avoid taxpayer bailouts, Goldman made the decision to expand into physical uranium activities.

(b) Operating a Physical Uranium Business

On June 30, 2009, as part of a larger commodities acquisition from the Constellation Energy Group, Goldman purchased 100% of the shares of Nufcor International Ltd. and Nufcor Capital Ltd., as well as an 8% ownership stake in the Nufcor Uranium Ltd. investment fund.[737] Goldman relied on the Gramm-Leach-Bliley grandfather clause as its legal authority to purchase Nufcor.[738]

Nufcor is a U.K. corporation, and its immediate owner is Goldman Sachs Group UK Limited, a London-based affiliate of the Goldman holding company.[739] Goldman explained to

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[734] Id. at 043 - 044.
[735] Id.
[736] Id.
[737] 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 002-003.
[738] Subcommittee briefing by Goldman Sachs (9/5/2014); 7/25/2012 "Presentation to Firmwide Client and Business Standards Committee: Global Commodities." (hereinafter "2012 Firmwide Presentation"), prepared by Goldman, FRB-PSI-200984 - 1043, at 1000 (indicating Nufcor was "owned under 4(o)." the grandfather clause). Although Goldman ultimately relied on the Gramm-Leach-Bliley grandfather authority, several facts suggest that Goldman may have considered holding Nufcor under its merchant banking authority. For example, Goldman placed Jacques Gabillon on the Nufcor Board of Directors; he was from the Goldman Commodities Principal Investments group, which oversaw Goldman's commodities-related merchant banking activities. In addition, Goldman's New Products Memorandum stated that Nufcor's uranium-related "positions will not be [m]arked to market and hence will sit out of VaR," a comment which implies that the plan was to hold Nufcor as a merchant banking portfolio company whose assets would not be valued on a daily basis in Goldman's trading books, but would instead be held by Goldman as a separate merchant banking investment. See 12/2008 Goldman New Product Memorandum on Uranium Trading, at FRB-PSI-400039 - 052, at 048. In the end, however, Goldman relied on the grandfathering authority as the legal basis for its physical uranium activities and completely integrated Nufcor's assets and trading into its own trading operations.
[739] 9/19/2014 letter from Goldman legal counsel to Subcommittee, at Exhibit A, GSPSICOMMODS00046240.

the Subcommittee that no employees conducting Nufcor's business stayed on after Goldman acquired it, and as a result, Goldman employees in the GS Commodities group took on management of Nufcor's operations.[740] As a result, Nufcor International Ltd. became a shell company whose business activities were conducted exclusively by Goldman employees.[741] As one Goldman document put it, Nufcor's uranium activities were "treated as [the] firm's own activities."[742] Goldman explained that it also shuttered Nufcor Capital Ltd., which was already in the course of being wound down at the time of its sale to Goldman.[743] In addition, Goldman stated that Nufcor Uranium, Ltd., the investment fund which had been organized as a Guernsey investment company, was later merged into the Uranium Participation Corporation, which is listed on the Toronto Stock Exchange.[744]

Since acquiring Nufcor in 2009, Goldman has used Nufcor International Ltd. to engage in a wide array of uranium-related activities.[745] The activities included buying and selling physical U3O8 and physical UF6 on the spot markets; forward contracts to buy and sell physical U3O8 and UF6; options on U3O8 and UF6; uranium futures contracts; and Conversion Service Credits.[746] Goldman also took ownership of hundreds of thousands of pounds of physical uranium, and became a supplier of uranium to utilities with nuclear power plants.[747]

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[740] Subcommittee briefing by Goldman Sachs (9/5/2014).
[741] Id.
[742] 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 ("Portfolio companies owned under 4(o) include Cogentrix and Nufcor – treated as firm's own activities.").
[743] Id. See also 12/31/2011 "Director's Report and Financial Statements," prepared by Nufcor International Ltd., GSPSICOMMODS00046281 - 290 at 282 (noting that the company had not traded in 2010 or 2011, had terminated its advisory agreement with its key client, and had also deregistered with the U.K. FSA).
[744] Id. On its website, the Uranium Participation Corporation describes itself as "focused solely on investing in uranium concentrates," such as U3O8 and UF_6, "with the primary investment objective of achieving appreciation in the value of its uranium holdings through increases in the uranium price." Uranium Participation Corporation website, http://www.uraniumparticipation.com/s/Home.asp.
[745] 5/17/2013 "Physical Commodity Review Committee: Meeting Minutes," prepared by Goldman, FRB-PSI-400053 - 055.
[746] Subcommittee briefing by Goldman Sachs (9/5/2014). Although Nufcor also previously traded Separative Work Units, Goldman has not traded them since the acquisition. 9/19/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, at 002.
[747] 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at Exhibit B, GSPSICOMMODS00046532 - 533.

After acquiring Nufcor, Goldman quickly increased the volume of its uranium trading, eventually surpassing Nufcor's 2009 benchmark by tenfold, going from an annualized 1.3 million pounds to nearly 13 million pounds in uranium trading per year from 2009 through 2013:

Goldman's Uranium Trading
2009 - 2013

Year	U3O8 Traded (Pounds)
2009 (annualized)	1.3 million
2010	4.7 million
2011	8.2 million
2012	13.7 million
2013	12.8 million

Source: 10/2/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 004.

The value of Goldman's physical uranium inventory also grew steadily, from an estimated $90 million in 2008 to more than $240 million in 2013, even as uranium prices fell:

Goldman's Physical Uranium Inventory
2010 - 2013

Date	Dollar Value
December 31, 2010	$112.8 million
December 31, 2011	$157.8 million
December 31, 2012	$230.3 million
December 31, 2013	$241.8 million

Source: Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2011, at GSPSICOMMODS00046251; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2012, at GSPSICOMMODS00046264; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2013, at GSPSICOMMODS00046278.

In addition, Goldman significantly expanded Nufcor's uranium supply contracts with utilities. At the time of acquisition in 2009, through Nufcor International, Ltd., Goldman became a supplier of uranium to two utilities with nuclear power plants.[748] As of June 30, 2014, it had supply contracts with nine utilities located in Florida, New Hampshire, Virginia, North Carolina, Washington state, Wisconsin, and elsewhere.[749] The longest of those supply contracts required Goldman to deliver uranium to the utility through 2018.[750]

Goldman told the Subcommittee that it is also holding a substantial inventory of forward contracts to buy or deliver over 3 million pounds of uranium over the next four years.[751] In addition, it is holding U3O8 future positions that mature in each of the next several years,

[748] Id. at Exhibit B, GSPSICOMMODS00046532, 533.
[749] Id.
[750] 9/19/2014 letter from Goldman Sachs legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, at 002.
[751] Subcommittee briefing by Goldman Sachs (9/5/2014).

involving hundreds of thousands of pounds of uranium.[752] Most of Nufcor's positions are held on a mark-to-market basis, pursuant to Goldman's valuation policy, and so are subject to daily price fluctuations.[753]

Goldman told the Subcommittee that, in connection with its physical uranium activities through Nufcor, it has stored U3O8 at three locations: ConverDyn facility in Illinois; Cameco facility in Canada; and Comurhex facility in France.[754] Each of those facilities converts U3O8 into UF6. In addition, Goldman has stored UF6 at three other locations: Louisiana Energy Services facility in New Mexico;[755] EURODIF S.A. facility in France; and URENCO facility in the Netherlands.[756] Each of those facilities enrich UF6.

When asked to summarize its physical uranium activities, Goldman described them as buying uranium from mining companies, storing it, and providing the uranium to utilities when they wanted to process more fuel for their nuclear power plants.[757] Goldman indicated that it was, essentially, financing the storage of the uranium until its buyers were ready to purchase it. Goldman said that it hedged its physical positions primarily by selling the physical supply through forward contracts.[758] At the same time Goldman acted as a supplier for the utilities, it was also speculating on uranium prices by trading uranium futures and other financial products.

Goldman documentation indicates that, in 2012, Goldman briefly considered expanding its physical uranium activities still further, by getting involved with transporting uranium, but decided not to go forward.[759] In 2013, GS Commodities personnel proposed expanding Goldman's physical uranium trading activities by including enriched uranium products. In May 2013, Goldman's Physical Commodity Review Committee met to consider the proposal, which involved buying and selling physical UF6 with enrichment levels up to five percent.[760] The proposal stated that the enriched uranium would be stored at a Global Nuclear Fuel facility in North Carolina.[761] Ultimately, Goldman decided against the proposal. Goldman explained to the Subcommittee that the decision was due, in part, to the departure of a key Goldman employee who had been a strong proponent of the physical uranium trading business.[762]

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[752] Id.
[753] See 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008 (noting that "all physical uranium futures, forwards, swaps and options are fair valued," other than UF6 forwards contracts which are treated as executory contracts and conversion credits are treated as intangibles); Subcommittee briefing by Goldman (9/5/2014).
[754] Subcommittee briefing by Goldman Sachs (9/5/2014).
[755] The facility is run by URENCO USA, Inc., a subsidiary of URENCO LTD. See "Company Structure," URENCO website, http://www.urenco.com/about-us/company-structure/.
[756] Subcommittee briefing by Goldman Sachs (9/5/2014).
[757] Id.
[758] Id.
[759] See 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1006 (indicating that, on 5/31/2012, a presentation was made to start a new activity, "Physical vessel transportation of Uranium (U3O8)," that review of that proposal was then underway); Subcommittee briefing by Goldman Sachs (9/5/2014).
[760] See 5/17/2013 "Physical Commodity Review Committee: Meeting Minutes," prepared by Goldman, FRB-PSI-400053 - 055.
[761] Id.
[762] Subcommittee briefing by Goldman Sachs (9/5/2014).

In 2014, Goldman put Nufcor up for sale.[763] Goldman told the Subcommittee that because it did not receive an acceptable bid for the business, Goldman was in the process of winding down Nufcor over the next several years.[764] Goldman told the Subcommittee that, as part of the wind down, it has stopped building its inventory of physical uranium and expects its physical and financial uranium positions to steadily decrease over the next few years.[765] Goldman explained that it currently has one uranium supply contract that continues until 2018,[766] and expects to complete that contract.[767] When asked why Goldman is exiting the uranium trading business, a Goldman representative replied that it was because the physical uranium business was "easy to misunderstand."[768] Additional possible reasons include lower uranium prices since the Fukushima Daiichi nuclear event in Japan, and pressure from the Federal Reserve regarding the risks of its physical commodity activities.

(4) Issues Raised by Goldman's Physical Uranium Activities

Goldman's uranium-related activities, which are expected to continue until at least 2018, raise multiple concerns, including insufficient capital and insurance to protect against a catastrophic event, unfair competition, conflicts of interest arising from controlling uranium supplies while trading uranium financial instruments, and inadequate safeguards.

(a) Catastrophic Event Liability Risks

One of the troublesome aspects of Goldman's involvement with physical uranium trading is the risk that if a catastrophic event were to occur involving the release of uranium from a storage facility, it could cause such severe financial damage to the financial holding company that the Federal Reserve, and ultimately taxpayers, might be called upon to rescue it. While such an event is highly unlikely, history has shown that nuclear accidents do occur, and the nature and extent of liabilities in connection with such an accident are uncertain.[769]

(i) Denying Liability

Goldman strenuously denies that its physical uranium activities create a substantial risk of additional liability for the financial holding company. Goldman recently discussed the liability issue generally in a publicly-available memorandum that it submitted to the Federal

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[763] Subcommittee briefing by Goldman Sachs (9/5/2014). See also "Goldman puts 'for sale' sign on Iran's old uranium supplier," Reuters. David Sheppard (2/11/2014). http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211.

[764] Subcommittee briefing by Goldman Sachs (9/5/2014).

[765] Id.

[766] 9/19/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-16-000001 - 006, at 002.

[767] 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 005.

[768] Subcommittee briefing by Goldman Sachs (9/5/2014).

[769] The Fukushima Diachii nuclear power plant disaster is a recent example of a nuclear disaster that was highly unlikely but did occur. Improbable events involving low level nuclear materials have also taken place. See, e.g., "Mexico's Stolen Radiation Source: It Could Happen Here," Bulletin of the Atomic Scientists, Tom Bielefeld (1/23/2014). http://thebulletin.org/mexico%E2%80%99s-stolen-radiation-source-it-could-happen-here (discussing instances in which low level nuclear materials were stolen while in transit).

Reserve in response to a Federal Reserve request for public comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities.[770] In its public comment, Goldman took the position that its liability for a commodities-related catastrophic event was limited, making three arguments:

- Most of its commodities pose no risk to the environment;
- Even the commodities that do pose a risk to the environment will not impose liability on Goldman, because Goldman does not operate the facilities used to store, ship, or process them; and
- Even if Goldman were assessed "some liability" for an environmental event, it would not be in an amount large enough to hurt the financial holding company.[771]

This generalized analysis differs from an internal analysis contained in Goldman's 2008 New Products Memorandum on trading uranium, which identified several ways in which Goldman might, in fact, incur liability as a result of a nuclear-related event. Also omitted from the public comment letter is Goldman's decision, in late 2011, to implement an additional layer of insurance for "contingent, third-party environmental/pollution liability coverage for risks that could emanate from either our physical trading activities or our investing activities."[772] While most insurance policies contain an exclusion for nuclear-related events,[773] Goldman's insurance policy included a specific amount of coverage that was not subject to an exclusion for a nuclear incident involving unenriched uranium.[774]

Despite purchasing insurance to help protect it against liability arising from a nuclear incident or other uranium-related environmental event, Goldman has continued to take the position that the possibility of incurring that liability is "rare" and that any such liability would not be "on a scale that could threaten the viability" of the financial holding company.[775]

Goldman has publicly pointed out that the "general approach" of most federal environmental law is to place liability for environmental damages on the owners and operators of the facilities responsible for the damages.[776] Goldman has publicly argued that it "will not be subject to liability under well-settled law" for its physical commodity activities, because it avoids being an "owner" or "operator" of facilities that store or transport commodities.[777] Goldman

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[770] See 4/16/2014 letter from Goldman Sachs Group, Inc. to the Federal Reserve, "Comment Letter on the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities (Docket No. R-1479: RIN 7100 AE-10)," Federal Reserve website, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf (hereinafter "2014 Goldman Comment Letter").
[771] Id. at 4, 13-19.
[772] 7/9/2013 memorandum from Goldman to Federal Reserve, FRB-PSI-201245 - 268, at 252.
[773] Id. at 253.
[774] 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 005.
[775] 2014 Goldman Comment Letter, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf, at 4.
[776] Id. at 14.
[777] Id. at 4; 14-16.

appears to have taken explicit steps to "avoid[] operator status" and instead "selec[t] qualified operators,"[778] such as third party vendors to own and operate the storage facilities for its uranium. Goldman's legal position appears to rely, in particular, on Bestfoods, a Supreme Court case delineating when a parent corporation can be held liable for pollution damages caused by a subsidiary.[779]

The legal liability of owners and operators of facilities does not, in and of itself, however, preclude others from also being found to have liability for environmental damages. In the recent Deepwater Horizon oil spill case, BP "neither owned the rigs … nor 'operated' them in the normal sense of the word."[780] Nevertheless, by the end of 2013, BP had recognized over $42 billion in losses from the event.[781] In addition, in September 2014, after a bench trial, a U.S. court found BP to be "grossly negligent" for its role in the disaster, opening the door to as much as $18 billion in additional damages.[782]

Federal environmental laws do not preclude lawsuits being filed against the holders of legal title to a commodity like uranium if that uranium were to be involved in a catastrophic event. As the Federal Reserve has pointed out: "liability may attach to [financial holding companies] that own physical commodities involved in catastrophic events even if the [financial holding companies] hire third parties to store and transport the commodities."[783] There is no dispute that Nufcor, a wholly owned subsidiary of Goldman, is the direct owner of its uranium. In addition, since Nufcor has no employees of its own, having become a shell entity, Goldman employees directly manage its business, including dealing directly with Nufcor's vendors. The level of Goldman's direct involvement in Nufcor's daily operations increases Goldman's potential liability for Nufcor's actions. As a result, if a catastrophic event were to occur involving uranium owned by Nfcor, at a minimum, Goldman could have to defend itself against claims in courts here or abroad, under the distinct laws in each jurisdiction.

In addition, as Goldman has recognized, under U.S. law, "a party that knowingly entrusts a hazardous material to an incompetent operator may be held liable."[784] A joint memorandum of law submitted in support of Goldman's submission to the Federal Reserve explicitly acknowledged that an owner of environmentally hazardous commodities could be held liable for

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[778] Id. at 15-16; Subcommittee briefing by Goldman Sachs (9/5/2014).
[779] See United States v. Bestfoods, 524 U.S. 51 (1998).
[780] "National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Chief Counsel's Report," at 30, http://www.eoearth.org/files/164401_164500/164423/full.pdf. (noting that BP personnel did, however, specify how the well was to be drilled).
[781] 2013-2014 Annual Report, BP plc, at 9, http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf.
[782] "BP May Be Fined Up to $18 Billion for Spill in Gulf," Campbell Robertson and Clifford Krauss, New York Times, (Sept. 4, 2014), http://www.nytimes.com/2014/09/05/business/bp-negligent-in-2010-oil-spill-us-judge-rules.html?_r=1.
[783] "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed.Reg. 3329, at 3332 (Jan. 21, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf.
[784] 2014 Goldman Comment Letter, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf, at 15.

negligently entrusting those commodities to an incompetent transportation or storage operator.[785] Case law includes a number of instances in which, in some jurisdictions, an owner may incur liability if it entrusts "a dangerous instrumentality" to a party that the owner knew or should have known was incompetent.[786]

To help address those risks, Goldman "maintain[s] an integrated risk management program of policies, procedures, diligence practices, governance arrangements, approval processes and insurance coverage."[787] Goldman also "maintain[s] 'emergency or event response' policies and procedures that are designed to address a situation in which a commodity that [it] own[s] becomes involved in an accident."[788] In addition, Goldman has a sophisticated vendor oversight system to evaluate, among other factors, a vendor's financial condition, insurance, and safety record.[789] As Goldman explained to the Federal Reserve in its public comment letter, it performs those basic checks to gain "confidence that the operator has the requisite expertise and capabilities to safely handle, store or transport [its] commodities" and provide a "basis to defeat claims that [it] knowingly entrusted [its] commodities to an incompetent operator."[790] Of course, a failure to follow those policies, procedures, and practices could increase the liability risk for Goldman.

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[785] See undated, but likely 4/2014 "Joint Memorandum of Law Prepared for SIFMA In Response to the Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Company Groups Related to Physical Commodities (DOCKET NO. R-1479; RIN 7100AE-10)," at 30, submitted on behalf of SIFMA by Covington & Burling LLP, Davis Polk & Wardwell LLP, Sullivan & Cromwell LLP and Vinson & Elkins LLP, http://www.sifma.org/issues/item.aspx?id=8589948617 (click on download to access Joint Memorandum of Law).

[786] See, e.g., Zokas v. Friend, 134 Mich. App. 437, 443 (Mich. App. Mar. 9, 1984) (noting that, "an owner or lender who entrusts a person with a dangerous instrumentality may be held liable to a third party who is injured by the negligent act of the entrustee, where the owner or lender knew, or could have reasonably been expected to know, that the person entrusted was incompetent"); Allstate Ins. Co. v. Freeman, 160 Mich. App. 349, 357 (Mich. App. May 19, 1987) (recognizing negligent entrustment where (1) the entrustor negligently entrusts the instrumentality to the entrustee, and (2) the entrustee negligently or recklessly misuses the instrumentality); RESTATEMENT (SECOND) OF TORTS §390 (1965); Shaffer v. Maier, Nos. C-900573, C-900600, 1991 WL 256493, at *8 (Ct. App. Ohio Dec. 4, 1991) (finding that liability can attach when there is entrustment of a chattel, inexperience or incompetence on the part of the entrustee, and actual or implied knowledge of that inexperience or incompetence on the part of the entrustor).

[787] 2014 Goldman Comment Letter, at 13, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf .3.

[788] Id. at 15.

[789] Subcommittee briefing by Goldman Sachs (9/5/2014); 2014 Goldman Comment Letter, at 16, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf. See also 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 085 ("Business Intelligence Group ("BIG") & GS Logistics team in Commodities Operations conduct diligence and vendor suitability checks on all providers, such as pipeline operators, in line with the firm's wider Vendor Management Policy. … Instituted best-in-class shipping, rail and pipeline transportation policies, enforced by GS Logistics team, include Critical Event Management Policy[.] Periodic review and enhancement of policies based on industry related 'events' e.g.: Quebec rail[.] … Engagement of Internal Audit and third parties to audit storage, transportation and delivery practices[.] Vendor management review of service providers including health & safety, environmental and OFAC.").

[790] 2014 Goldman Comment Letter, at 16, http://www.federalreserve.gov/SECRS/2014/May/20140506/R-1479/R-1479_041614_124563_481901890144_1.pdf.

The extent to which Goldman exercises oversight of the third party vendors for its uranium activities and requires them to meet Goldman's standards for reliability and competence is unclear. Rather than evaluating third parties to assess the competency of its uranium vendors, as it does with other commodity vendors, Goldman appears to have relied exclusively on the licenses obtained by the uranium storage and processing facilities it used.[791] Goldman's vendor oversight activities, if found insufficient, might cause a state, U.S. federal, or foreign court to attach some degree of liability to Goldman. For that reason, Goldman could find itself litigating, on a case-by-case basis, whether it took adequate steps to prevent its commodities from being given to an incompetent vendor.

Still another set of concerns involves the potential financial impact that a catastrophic event could have on Goldman even if it were eventually proved correct in court that it had no legal liability for damages. As the financial crisis demonstrated, parties viewed by the public as being potentially liable for damages may be shunned by customers as well as potential counterparties. In the aftermath of a catastrophic event linked to a financial holding company, market participants could react by withdrawing funds from the holding company or its banks, refraining from doing business with them, or demanding increased compensation to continue being exposed to their credit risk. It is not inconceivable that the ability of a financial holding company to conduct its day-to-day businesses could be threatened as business partners seek to lessen their financial exposure to the potentially risky party. That type of reaction could worsen over time if the publicity and magnitude of an event increase.

This aspect of catastrophic event risk means that, even if as a legal matter, Goldman were found not to be liable for damages arising from a nuclear incident or other uranium-related event, market participants' fears that Goldman might incur liability might nevertheless lead to financial difficulties and even losses for the financial institution.

The likelihood of a nuclear-related event is, of course, remote. However, while Goldman has publicly dismissed the risk of such an event, that risk may be much greater than Goldman has, to date, planned for.

(ii) Allocating Insufficient Capital and Insurance

A related issue involves the amount of capital and insurance coverage Goldman has allocated to protect against potential losses associated with a catastrophic event arising from its physical uranium activities. Adequate capital and insurance are the key financial safeguards to prevent a Federal Reserve or taxpayer bailout in the event of substantial losses arising from a catastrophic event. In part because Goldman has concluded that it has essentially no potential liability for losses arising from a catastrophic event, and in part due to lax regulatory requirements, Goldman's allocations for capital and insurance coverage appear to be inadequate.

In its recent public filing seeking comment on whether it should impose new regulatory constraints on financial holding companies conducting physical commodity activities, the Federal Reserve made the following observation:

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[791] See 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-GoldmanSachs-19-000001 - 009, at 002 - 003.

> "Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants."[792]

Consistent with that observation, the facts suggest that financial losses arising from a uranium-related catastrophe could far exceed all of the capital allocated by Goldman for its entire commodities business plus any applicable insurance.

Goldman's capital for its entire commodities portfolio, as of March 2013, was about $3.4 billion, of which the "operational risk" component was about $400 million.[793] In a 2013 memorandum sent by Goldman to the Federal Reserve, Goldman admitted that its capital allocations included "no explicit scenario for environmental/catastrophic damage for any business line."[794] In other words, Goldman apparently holds no added capital to cover the risk to its commodities business arising from any environmental disaster or catastrophic event, including one related to its uranium holdings.

In addition, Goldman has apparently calculated its "operational" risk of loss related to the storage and transportation of all of its physical commodities by selecting a figure equal to the dollar value of those assets alone, and nothing more.[795] In particular, Goldman has calculated its operational risk capital so that it corresponds to the "highest dollar value of inventory at a single location."[796] That means, for example, if a catastrophic event were to take place involving oil or uranium, Goldman has calculated that its maximum loss would equal the lost value of the oil or uranium itself. It did not include additional costs arising from, for example, loss of life, property damage, pollution cleanup, legal expenses, or the failure to honor any existing contracts to deliver oil or uranium.[797] In its 2012 Summary Report, the Federal Reserve Commodity Team noted that Goldman's catastrophic risk valuation methodology for its power plants was to use "simply the current value of its most valuable power plant," with no provision for potential expenses stemming from loss of life, worker disability, facility replacement, or a "failure to deliver electricity under contract."[798]

In light of the financial consequences of recent disasters ranging from oil spills to nuclear meltdowns to power plant explosions, that approach appears highly unrealistic, and produces capital allocations far below what is needed to safeguard taxpayers. The latest example is BP,

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[792] "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed. Reg. 3329, at 3331 (Jan. 21, 2014). http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/2014-00996.pdf.
[793] 7/9/2013 memorandum from Goldman Sachs to Federal Reserve, FRB-PSI-201245 - 268, at 248.
[794] Id. at 250.
[795] Id.
[796] Id. at 251.
[797] 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by FRBNY Commodity Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510, at 498.
[798] Id. at 494.

which has already recognized losses over $42 billion as a result of Deepwater Horizon – an amount well in excess of the dollar value of the physical oil that was lost.[799]

Additionally, many environmental laws, which are intended to protect clean air and water, for example, are intended to have significant deterrent effects, and thus provide for treble or even greater penalties for violations. In the event that Goldman were to find itself with liability under U.S. or foreign environmental laws, Goldman's liabilities could end up being many multiples of the damages suffered, as may happen in the BP oil spill case where the court's finding of "gross negligence" and "reckless" conduct may produce a fine equal to as much as $4,300 per barrel for the spill, exceeding the cost of both the spilled oil and the cleanup.[800] Such findings could also trigger exclusions under established insurance policies, making the insurance payments unavailable.[801]

When the Federal Reserve's Commodities Team concluded its special review of financial holding company involvement with physical commodities, it expressed concern that all of the financial holding companies it examined, including Goldman, had insufficient capital and insurance coverage to cover potential losses from a catastrophic event.[802] The 2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies against estimated costs associated with "extreme loss scenarios." It found that at each institution, including Goldman, "the potential loss exceed[ed] capital and insurance" by $1 billion to $15 billion.[803] Insufficient capital and insurance coverage increases the risk of a Federal Reserve or taxpayer bailout were a catastrophic event to occur.

(b) Unfair Competition

A completely different set of concerns raised by Goldman's physical uranium activities involves issues related to unfair competition. When Goldman acquired Nufcor in 2008, it was a leading uranium company that had been in business for 40 years.[804] Goldman's analysis indicated Nufcor then had a portfolio of physical and financial uranium holdings worth about $47 million and an annualized trading volume involving about 1.3 million pounds of uranium.[805]

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[799] 2013 "Annual Report and Form 20-F 2013," prepared by BP p.l.c., BP p.l.c website, at 9, http://www.bp.com/content/dam/bp/pdf/investors/BP_Annual_Report_and_Form_20F_2013.pdf.

[800] See In re Oil Spill by Oil Rig Deepwater Horizon in Gulf of Mexico, on April 20, 2010, 2014 WL 4375933 (E.D. La. Sept. 4, 2014); see also "BP's 'gross negligence' caused Gulf oil spill, federal judge rules," The Washington Post, Steve Mufson (9/4/2014), http://www.washingtonpost.com/business/economy/bps-gross-negligence-caused-gulf-oil-spill-federal-judge-rules/2014/09/04/3e2b9452-3445-11e4-9e92-0899b306bbea_story.html.

[801] Subcommittee briefing by Chiara Trabucchi, an expert in financial economics and environmental risk management (10/7/2014).

[802] See 2012 Summary Report, FRB-PSI-200477 - 510, at 498.

[803] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499. The recent decision in the BP oil spill case suggests that the "extreme loss" scenarios may entail expenses beyond those contemplated as recently as 2012.

[804] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 039.

[805] Id. at 040.

Within one year, Goldman more than tripled Nufcor's trading volume and increased the value of its inventory by about 40%.[806] Within five years, Goldman had increased Nufcor's trading volume by tenfold, increased its physical uranium inventory so that its dollar value more than doubled despite falling uranium prices, and increased the number of its supply contracts from two to nine major utilities.[807] By 2013, Goldman controlled millions of pounds of uranium in storage facilities in the United States and Europe.

This rapid expansion of Nufcor's uranium activities is attributable, not just to Goldman's business acumen, but possibly also to inherent advantages that financial holding companies have when competing against businesses that are not affiliated with banks. First, a holding company has access to inexpensive credit from its subsidiary bank, enabling its borrowing costs to nearly always undercut those of a nonbank corporation. Another advantage is the financial holding company's relatively low capital requirements. The Federal Reserve determined that corporations engaged in oil and gas businesses typically had a capital ratio of 42% to cover potential losses, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.[808] Less expensive financing and lower capital requirements are the types of inherent bank advantages that contribute to the traditional U.S. ban on mixing banking with commerce.

(c) Conflicts of Interest

Still another set of issues raised by Goldman's uranium activities involves conflicts of interest. The conflicts arise from the fact that Goldman was trading uranium-related financial products at the same time it was intimately involved with an array of physical uranium activities. Goldman's conduct raises two sets of conflict of interest concerns, one involving non-public information and the other involving physical uranium supplies.

Because Nufcor had no employees of its own, Goldman employees conducted all of its business activities and were necessarily privy to all of its non-public information. While commodities laws traditionally have not barred the use of non-public information by traders in the same way as securities laws, concerns about unfair trading advantages deepen when the commodities trader is a major financial institution that can influence a small and volatile market like uranium. Goldman's acquisition of Nufcor gave it access to a substantial amount of commercially valuable, non-public information about the uranium market. First, Goldman gained insight into Nufcor's own physical and financial uranium inventories and trading patterns. According to Goldman's analysis, for example, in 2008, Nufcor had 20% of the open interest for uranium futures,[809] a sizeable market position. Second, by acquiring Nufcor, Goldman gained information about the mining companies that supplied it with physical uranium as well as the uranium needs of major utilities. Goldman also gained information about the timing, locations,

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[806] See 10/2/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-21-000001 - 010, at 004; see also Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2011, at GSPSICOMMODS00046251; Nufcor International Ltd. Notes to the Financial Statements, for 12/31/2012, at GSPSICOMMODS00046264 (reflecting an increase in uranium inventory holdings from $112.8 million to $157.8 million.

[807] See discussion, above.

[808] 2012 Summary Report, FRB-PSI-200477 - 510, at 499.

[809] 12/2008 Goldman New Product Memorandum on Uranium Trading, FRB-PSI-400039 - 052, at 042.

and nature of the transport of millions of pounds of uranium, as well as the scheduling and operations of six major uranium storage facilities and processing centers.

Goldman's access to that non-public data about physical uranium would have provided useful market intelligence that Goldman employees could have used to benefit Goldman's trading in the physical and financial uranium markets. Non-public information about a uranium transport delay, processing schedules, or utility shutdowns could have been used to short futures or make profitable trades on forwards. As shown earlier, after acquiring Nufcor, Goldman expanded its uranium trading volume tenfold, becoming a more significant market participant. A major concern is whether Goldman used any non-public information to gain a trading advantage over other market participants.

A second conflict of interest issue is whether Goldman's increasing control over uranium supplies created opportunities for unfair trading advantages or price manipulation. Goldman expanded Nufcor's physical uranium inventory over time until, by 2013, Goldman controlled millions of pounds of uranium in storage facilities in the United States and Europe. Goldman also increased the number of its supply contracts from two to nine major utilities across the United States, Canada, and Europe. Its increased ability to make decisions over the amount and timing of physical uranium deliveries created market manipulation opportunities that could have been used to benefit Goldman's trading activities in the small and volatile uranium market or in affected electricity markets. Historically, banks and bank holding companies have not exerted that extent of control over a physical market and have not raised the same type of market manipulation concerns.

(d) Inadequate Safeguards

A final set of issues involves a lack of regulatory safeguards related to financial holding company involvement with a high risk physical commodity activity like uranium. Physical uranium becomes increasingly toxic as it is enriched, is subject to complex regulatory regimes related to its storage, handling, and transit, and trades in a small, volatile market. It imposes, not only the catastrophic event risks discussed above, but also financial risks due to volatile prices and limited counterparties.

Although Goldman had not engaged in physical uranium activities prior to becoming a bank holding company, it claimed it could do so under the grandfather clause in the Gramm-Leach-Bliley Act for authority. The Federal Reserve has never ruled on whether Goldman's entry into the physical uranium market was an appropriate exercise of the grandfather clause, nor has it issued general guidance on the proper scope of the grandfather authority.[810] Additionally,

[810] The Bank Holding Company Act of 1956 gives the Federal Reserve broad authority to issue orders and regulations necessary to carry out the purposes of the Act and prevent evasions of it. See, e.g., Bank Holding Company Act of 1956, P.L. 84-511, §5(b), codified at 12 U.S. Code §1844. That broad grant of authority provides the legal foundation for the Federal Reserve to issue regulations or orders interpreting the scope of the grandfather clause and setting limits on the size of grandfathered activities to support the purposes of Act, which have been described as seeking to "limit the comingling of banking and commerce," and "prevent situations where risk-taking by nonbanking affiliates erodes the stability of the bank's core financial activities." "A Structural View of U.S. Bank Holding Companies," Dafna Avraham, Patricia Selvaggi, and James Vickery of the Federal Reserve Bank of

because Goldman relied on the grandfather clause to authorize its uranium activities, those activities were not subject to the prudential size limit imposed by the Federal Reserve on complementary activities which, were it to apply, would prohibit physical commodity activities from exceeding 5% of the financial holding company's Tier 1 capital. The only cap on the size of Goldman's uranium activities was the statutory prohibition that its grandfathering activities not exceed 5% of Goldman's consolidated assets of $912 billion,[811] a limit set so high as to be no meaningful restriction at all.

A final consideration is whether financial holding companies should be allowed to trade in such a limited and volatile market as that represented by uranium. The Federal Reserve has generally allowed financial holding companies to trade in any commodity that the CFTC has approved for trading on an exchange. It has not required that the commodities reach a particular volume of trading or other measure of liquidity. While U3O8 futures are traded on a CFTC-regulated exchange, uranium is not a robust market, and often has zero contracts traded in a day. The illiquid state of the uranium market illustrates the dangers of relying solely on the exchange-trading requirement to approve financial holding company trading in a particular commodity.

(5) Analysis

Since acquiring Nufcor in 2009, Goldman has owned and traded millions of pounds of uranium and millions of dollars of uranium-related financial products. The risks attached to those activities continue to be significant, and Goldman's efforts to address and mitigate them have fallen short of what the Federal Reserve has indicated is necessary.

Goldman is not the only financial holding company to have engaged in physical uranium activities. Deutsche Bank has been another key player in uranium,[812] and JPMorgan has considered initiating physical uranium activities.[813] It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

New York, FRBNY Economic Policy Review (7/2012), at 3; http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf [footnotes omitted].

[811] See 12/31/2013 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Goldman with the Federal Reserve, at 13. http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_2380443_20121231.PDF.

[812] See, e.g., "Goldman puts 'for sale' sign on Iran's old uranium supplier," Reuters, David Sheppard (2/11/2014), http://www.reuters.com/article/2014/02/11/us-goldman-uranium-insight-idUSBREA1A0RX20140211 (discussing Deutsche Bank's involvement in uranium activities).

[813] See, e.g., 9/28/2009 "[Global Commodities] BCC Agenda," prepared by JPMorgan, FRB-PSI-304493-520, at Appendix 5, FRB-PSI-304520; 2/11/2011 Global Commodities Group Operating Risk Committee Meeting Agenda, including attachment entitled, "Marketing of Physical Uranium NBIA: Overview of Transaction," FRB-PSI-302581 - 587, at 584 - 585.

C. Goldman Involvement with Coal

For many years, including prior to its 2008 conversion to a bank holding company, Goldman traded coal futures and other coal-related financial products, as well as arranged for the shipping and storage of coal for customers such as coal producers, coal traders, and coal-fired power plants. In 2010, Goldman dramatically expanded its physical coal activities by purchasing an open pit coal mine in Colombia with related railroad and port assets. In 2012, Goldman purchased a second coal mine next to the first. Today, in addition to its longstanding coal trading operations, Goldman is involved with producing, storing, transporting, selling, and supplying physical coal.

Tracing Goldman's four-year Colombian coal venture illustrates the many risks involved with getting into a complex area like coal mining, including operational problems, regulatory challenges, and environmental and catastrophic event risks. It also demonstrates how the mines' merchant banking status – an investment that must be sold within ten years – creates a disincentive for Goldman to make the necessary investments to operate the mines in a safe and environmentally sound manner, exacerbating its operational and catastrophic event risks. Additional concerns involve Goldman's legal authority to get into the coal mining business in the first place, and the conflicts of interest that arise when a Goldman subsidiary conducts coal supplies and transport activities, while also trading coal-related financial instruments.

(1) Background on Coal

Coal is a naturally occurring fossil fuel formed from compressed and pressurized plant matter, found mainly in deposits beneath the earth's crust.[814] It has been used across the world as a source of energy for hundreds of years.[815] Today, coal is predominantly used to generate electricity, produce iron and steel, manufacture cement, and provide a liquid fuel.[816] In 2013, for example, about 39% of the electricity generated in the United States came from coal-fueled power plants.[817] The world's supply of coal is finite, and expert opinions differ as to how much longer global coal reserves will last.[818]

Coal Production. Coal "production" refers to the process by which coal is extracted from the earth and prepared for commercial use. It typically involves mining the coal from the ground and treating it to achieve a consistent level of quality for end users.[819] Depending upon the geology of the coal deposit, extraction of the coal may be accomplished through surface

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[814] "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 2, http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf.
[815] Id. at 19.
[816] Id. at 20-24.
[817] "Electricity in the United States," U.S. Energy Information Administration (8/12/2014), http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states.
[818] "How Much Coal is Left," U.S. Energy Information Administration (7/3/2014), http://www.eia.gov/energyexplained/index.cfm?page=coal_reserves.
[819] "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 7-8, http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf.

mining (also called "open pit" mining), underground mining, strip mining, or mountain top removal.[820]

The United States is currently the world's second-largest coal producer, following China.[821] In 2012, 1.02 billion tons of coal were produced in the United States, making up nearly 12% of the coal produced worldwide.[822] Other major coal producers include India, Indonesia, and Australia.[823] In 2012, Colombia was the world's eleventh largest producer of coal,[824] but exported more coal to the United States than any other country, providing about 74% of total U.S. coal imports in 2013.[825] The majority of the time, coal is used in the country in which it was produced; only about 18% of the world's hard coal production reaches the international market.[826]

Coal Infrastructure. Moving coal from a production site to a end-user requires a complex infrastructure. Coal transport may be via truck, rail, or shipping vessel. Within the United States, for short distances, coal is typically transferred via conveyor or truck; for longer distances, rail or barge transport is common.[827] Although less common, coal can also be mixed with water and transported by pipeline.[828] In addition to transportation infrastructure, after being mined, coal requires treatment at a coal preparation plant, where impurities are removed to improve the coal's quality and value.[829] The level of treatment varies depending upon the coal's content and intended use. Coal storage facilities are also often needed and can be found, for example, at mining sites, ports, and end-users such as utilities. Coal-fired power plants may also construct containment facilities for spent coal ash, including coal slurry ponds.[830]

Coal Markets. Coal trades in both physical and financial markets. In the physical market, coal prices are typically determined through bilateral contracts, including "direct supplier-consumer transactions and third-party transactions, and on bids and offers, whether via

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[820] See 2012 memorandum, "Metals & Mining: Background to Environmental and Social Due Diligence," prepared by Goldman, FRB-PSI-300221 - 230, at 223.
[821] "International Energy Statistics: Total Primary Coal Production (Thousand Short Tons)." U.S. Energy Information Administration. http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=1&pid=7&aid=1.
[822] Id.
[823] Id.
[824] Id.
[825] See "Frequently Asked Questions: From what country does the U.S. import the most coal?," U.S. Energy Information Administration (6/13/2014), http://www.eia.gov/tools/faqs/faq.cfm?id=67&t=2. Colombian coal imports can outcompete coal produced domestically in the United States. See, e.g., "Coal imports add stress to U.S. glut," Pittsburgh Post-Gazette, Anya Litvak (11/9/2014). http://powersource.post-gazette.com/powersource/companies-powersource/2014/11/09/Coal-imports-add-stress-to-U-S-glut/stories/201411090069.
[826] "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 13, http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf.
[827] Id. at 9.
[828] Id.
[829] Id. at 8.
[830] "Preventing Breakthroughs of Impounded-Coal-Waste-Slurry Into Underground Mines," Office of Surface Mining Reclamation and Enforcement, Peter R. Michael, Michael W. Richmond, David L. Lane, & Michael J. Superfesky (2013), at 2, http://wvmdtaskforce.com/proceedings/13/Michael-Paper.pdf.

traders, brokers, the over-the-counter market, or secondary deals among consumers."[831] As indicated in the following chart, over the last ten years, coal prices have been volatile:



Source: "Historical Coal Prices and Price Chart," InfoMine Inc., http://www.infomine.com/investment/metal-prices/coal/all/.

In 2008, coal prices spiked, in particular for "thermal coal" used to fuel electrical power plants. This price spike took place around the same time that oil prices unexpectedly jumped and then declined. Since then, coal prices have not returned to their 2008 peak, but have remained somewhat volatile. While U.S. power generation is shifting away from reliance on coal as a fuel source, worldwide demand for coal has nevertheless risen due in part to increasing energy demand from developing countries.[832] Key market participants include coal mines and distributors, as well as commercial and industrial users such as power plants.

In addition to the physical market, coal is traded in the financial markets using a variety of financial products, including futures, options, and swaps. The New York Mercantile Exchange (NYMEX), for example, began offering futures in North American coal in 2001.[833] One of the more commonly traded coal contracts, the Central Appalachian Futures Contract, tracks prices for 1,550 tons of coal and is available for trading on CME Globex, CME ClearPort,

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[831] See "Methodology and Specifications Guide: Coal," Platts (9/2014), at 3, http://www.platts.com/IM.Platts.Content/methodologyreferences/methodologyspecs/coalmethodology.pdf.
[832] "The Coal Resource: A Comprehensive Overview of Coal," World Coal Institute (3/6/2009), at 39, http://www.worldcoal.org/bin/pdf/original_pdf_file/coal_resource_overview_of_coal_report(03_06_2009).pdf.
[833] See "NYMEX Coal Futures Near-Month Contract Final Settlement Price 2014," Energy Information Administration (10/14/2014), http://www.eia.gov/coal/nymex/.

and by open outcry.[834] A number of coal-related financial products are also available on the Intercontinental Exchange.[835]

Coal Mining Incidents. Coal mining is an inherently dangerous process with significant occupational hazards. For example, in the week ending October 31, 2014, a coal mining accident in China claimed at least 16 lives,[836] and at least 18 people were still trapped in a flooding coal mine in Turkey.[837]

Colombia, in particular, has experienced several deadly mining incidents in recent years. In 2010, for example, an explosion at a coal mine in Amaga, Colombia, trapped scores of miners underground,[838] reportedly killing 73 people.[839] A flood in that same mine a few years earlier killed five miners.[840] On January 26, 2011, a gas explosion at the La Preciosa mine in Sardinata, Colombia, killed 21 miners and seriously injured six others.[841] Investigators found that the explosion was likely due to a buildup of methane gas ignited during a shift change in the mine.[842] A similar incident took the lives of 32 employees in that same mine in 2007.[843]

In addition to mining disasters, coal mining has produced air and water pollution in the surrounding communities. In Colombia, the government recently ordered several towns in the Cesar region to be relocated due to mining-related air pollution.[844]

(2) Goldman Involvement with Coal

While Goldman has traded coal in financial and physical markets for years, Goldman fundamentally expanded its physical coal activities by purchasing an open pit coal mine in Colombia in 2010, and a neighboring open pit coal mine in 2012. Goldman formed a number of Colombian entities to function as the mine owners, including CNR, while its primary commodities trading arm, J. Aron & Co., became the mines' exclusive coal marketing and sales

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[834] See contract specifications for the "Central Appalachian Coal Futures Contract," CME website, http://www.cmegroup.com/trading/energy/coal/central-appalachian-coal_contract_specifications.html.
[835] See coal listings on the IntercontinentalExchange website, https://www.theice.com/products/Futures-Options/Energy/Coal.
[836] "Coal mine accident in far west China kills 16: Xinhua," Reuters, Kazunori Takada (10/25/2014), http://www.reuters.com/article/2014/10/25/us-china-coal-accident-idUSKCN0IE03320141025.
[837] "18 miners trapped in coal mine accident in Turkey," Associated Press (10/28/2014), http://www.nydailynews.com/news/world/18-miners-trapped-coal-accident-turkey-article-1.1989940.
[838] "Colombian Coal Mine Blast Kills at Least 18," New York Times, Simon Romero (6/17/2010), http://www.nytimes.com/2010/06/18/world/americas/18colombia.html.
[839] "73 Killed in Coal Mine Blast, Colombian Authorities Say," Latin American Herald Tribune, http://www.laht.com/article.asp?ArticleId=359210&CategoryId=12393.
[840] "Colombian Coal Mine Blast Kills at Least 18," New York Times, Simon Romero (6/17/2010), http://www.nytimes.com/2010/06/18/world/americas/18colombia.html.
[841] "Colombia Searches for Answers in Mine Blast," Wall Street Journal, Dan Molinski (1/28/2011), http://online.wsj.com/articles/SB10001424052748704680604576110044086058786.
[842] Id. Methane buildup is not a problem specific to mines in Colombia; coal mine methane has been identified as a serious issue in the United States, China, and India as well. 2012 memorandum, "Metals & Mining: Background to Environmental and Social Due Diligence," prepared by Goldman Sachs, FRB-PSI-300221 - 230, at 223.
[843] "Colombia Searches for Answers in Mine Blast," Wall Street Journal, Dan Molinski (1/28/2011), http://online.wsj.com/articles/SB10001424052748704680604576110044086058786.
[844] See 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translation provided by Goldman).

agent.[845] From 2010 to 2012, Goldman increased the mines' coal exports, while J. Aron & Co. purchased about 20% of the output for Goldman's own activities and sold the remaining 80% to third parties.

Beginning in 2012, a litany of operational and environmental problems reduced the mines' coal exports and revenues. They included mine and railway closures, contractor disputes, labor unrest, pollution concerns, regulatory limits on mining activities, port access problems, flooding, and declining coal prices. Despite those problems, Goldman was able to offset losses through a short coal hedge that, in 2013, produced a nearly $250 million gain.[846] In 2014, due to ongoing port access problems, the mines did not export any coal.

(a) Trading Coal

Goldman told the Subcommittee that it has traded coal-related financial instruments as well as physical coal for many years.[847] Its financial trading has included coal-related futures, swaps, options, forwards and other instruments, both on-exchange and over-the-counter. Its physical coal activities have included storing, transporting, and supplying physical coal to various customers, including coal-fired power plants.

Coal trading at Goldman is conducted within the GS Commodities group, by the "U.S. Natural Gas & Power" unit which, among other activities, operates a coal trading desk.[848] Most of the trades are booked through J. Aron & Co., Goldman's leading commodities trading arm.[849] According to Goldman, in its 2009 fiscal year, it bought financially settled coal financial instruments representing 159 million metric tons of coal and sold 121 million metric tons, of which Goldman took physical delivery in about 4% of the trades, resulting in deliveries of about 5.2 million metric tons of coal.[850]

With respect to its physical coal activities, Goldman informed the Subcommittee that, during the five year period from 2008 to 2012, it bought and sold millions of metric tons of coal.[851] For example, in 2008, it purchased about 2 million metric tons and sold about 300,000 metric tons. In 2011, it purchased about 16 million metric tons and sold nearly 18 million metric tons.[852] It also stored and transported millions of metric tons of coal.[853] For example, in 2008, it transported about 2 million metric tons, while in 2011 it transported nearly 9 million metric tons

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[845] 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 - 003 at 001.
[846] 9/2013 "Global Commodities & Goldman Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.." prepared by Goldman. FRB-PSI-400077 - 098. at 091.
[847] Subcommittee briefing by Goldman (9/5/2014). In materials submitted to the Federal Reserve, Goldman indicated that it began trading coal sometime after 1997. See 5/26/2011 "Questions from the Federal Reserve on 4(o) Commodities Activities," prepared by Goldman. FRB-PSI-200600 - 610. at 600.
[848] See 3/2010 "Federal Reserve Bank of New York Discovery Review: Global Commodities – US Natural Gas & Power," prepared by Goldman, FRB-PSI-400006 - 015, at 007.
[849] 10/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-19-000001 - 009, at 008.
[850] 3/2010 "Federal Reserve Bank of New York Discovery Review: Global Commodities – US Natural Gas & Power," prepared by Goldman, FRB-PSI-400006 - 015, at 008.
[851] 4/30/12 Goldman response to Subcommittee Questionnaire, GSPSICOMMODS00000005 - 007.
[852] Id.
[853] Id. at 006.

of coal.[854] Goldman indicated that, in 2012, it stored coal at facilities in Alabama, Florida, Illinois, Louisiana, and Virginia within the United States, as well as at locations in Colombia, Europe, and Australia.[855]

One reason Goldman deepened its involvement with physical coal was its increasing involvement with coal-fired power plants. From 1997 to 2001, Goldman entered into a joint venture with Constellation Energy Commodities Group, Inc. (Constellation Energy) to "create an arrangement for [the] trading of physically-settled power transactions."[856] In 1998, as part of that effort, they jointly formed Orion Energy, a company which purchased power plants across the country, including plants fueled with coal.[857] In 2002, Orion Energy went public.[858]

In 2003, Goldman purchased 100% of Cogentrix Energy LLC, a U.S. company that developed, owned, and operated power plants.[859] At the time of the acquisition, Cogentrix owned 24 power plants, 14 of which were coal-fired; over the next ten years, it bought and sold those and other plants.[860] Cogentrix managed some of the plants' fuel procurement needs, including by arranging long term coal supply contracts.[861] According to Goldman, Cogentrix sold 80% of its ownership interests in a portfolio of power plants to funds managed by Energy Investors Funds in 2007, and sold the remaining 20% interest in that portfolio in 2011.[862] Even after that sale, in October 2012, the Federal Reserve Bank of New York Commodities Team wrote that Goldman had tolling agreements with four power plants, while its wholly-owned subsidiary, Cogentrix, owned 30 power plants in the United States and abroad.[863] According to Goldman, in December 2012, Cogentrix sold its ownership interests in all of its remaining power plants to funds managed by the Carlyle Group.[864]

Goldman records also show that, in 2007, its Global Commodities Principal Investing (GCPI) group purchased an ownership interest in an Australian coal mine owned by Syntech Resources for about $195 million.[865] Goldman held the mine as a merchant banking investment until it sold the mine four years later in 2011.[866] Goldman also purchased from Constellation

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[854] Id.
[855] 4/30/12 Goldman response to Subcommittee Questionnaire. GSPSICOMMODS00000008 - 014.
[856] 3/26/2011 "Questions from the Federal Reserve on 4(o) Commodities Activities," prepared by Goldman, FRB-PSI-200600 - 610, at 608 (discussing Goldman's joint venture with Constellation Energy).
[857] Id. at 610.
[858] Id. See also, e.g., "Nice work[:] How to make a fortune from a utility," The Economist (11/22/2001), http://www.economist.com/node/877192.
[859] See 9/19/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 003.
[860] Id.
[861] Id.
[862] Id.
[863] 2012 Summary Report, at FRB-PSI-200477 - 510, at 485.
[864] Id.
[865] See 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 087; 1/29/2010 "Global Commodities Principal Investments: Portfolio Snapshot," prepared by Goldman, FRB-PSI-602255.
[866] Id. See also 8/2/2011 "Yancoal Acquires 100% of Syntech Resources," Yancoal press release, http://www.yancoal.com.au/icms_docs/122173_Yancoal_Acquires_100_of_Syntech_Resources.pdf; "China's Yanzhou Coal buys Aussie mine for $202m," The Australian, Matt Chambers (8/3/2011),

Energy, in 2009, a book of commodities assets which included a number of coal-related assets.[867]

(b) Acquiring the First Colombian Coal Mine

Goldman's foray into Colombian coal mining had its roots in Goldman's 2009 acquisition from Constellation Energy.[868] Goldman told the Subcommittee that, as part of that Constellation Energy transaction, it acquired an array of coal-related assets, including nearly 700 coal swaps, 58 contracts to buy or sell physical coal, inventories of physical coal, port access agreements related to coal, and four ship charters related to the shipment of coal.[869] Goldman told the Subcommittee that one of the coal-related assets was a coal supply contract that Constellation Energy had with Coalcorp Mining, Inc., a Canadian company that owned a Colombian coal mine.[870] That contract required Coalcorp to supply Constellation Energy with 2.4 million metric tons of coal over a five-year period from 2009 to 2012, with an option for another year.[871] According to Goldman, as the successor to that contract, it became an unsecured creditor of Coalcorp, a company then in financial distress.[872]

According to information supplied by Coalcorp to its shareholders, Coalcorp discussed refinancing its debt with Goldman in September 2009, but the two were unable to reach an agreement on terms.[873] Goldman told the Subcommittee that, to protect itself from the counterparty credit risk, it began to explore buying Coalcorp's key asset, the Colombian coal mine, as part of the consideration for restructuring the coal supply contract.[874] Goldman indicated that its Global Commodities Principal Investments group took the lead in examining the coal mine as a potential merchant banking investment.[875]

In January 2010, Goldman and Coalcorp publicly announced that Goldman would acquire Coalcorp's La Francia mine.[876] The transaction was comprised of several parts.[877] First,

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http://www.theaustralian.com.au/business/news/chinas-yanzhou-coal-buys-aussie-mine-for-202m/story-e6frg906-1226106981679.

[867] See 1/20/2009 Constellation Energy press release. "Constellation Energy Enters into Definitive Agreement to Divest the Majority of its International Commodities Business," http://www.constellation.com/documents/news/264949.pdf.

[868] Subcommittee briefing by Goldman Sachs (9/5/2014). Constellation Energy, a U.S. utility and trading business, sold Goldman "trading positions in gas, power, coal & freight." 11/2011 "Global Commodities Business Overview[:] Presentation to the Federal Reserve," prepared by Goldman, FRB-PSI-201176 - 188, at 184.

[869] Subcommittee briefing by Goldman Sachs (9/5/2014); 10/2/2014 chart on coal transactions associated with Constellation Energy, GSPSICOMMODS00046535.

[870] Subcommittee briefing by Goldman Sachs (9/5/2014).

[871] Id; 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 006.

[872] Subcommittee briefing by Goldman Sachs (9/5/2014). See also, e.g., "Coalcorp fights to avoid forced bankruptcy," National Post (1/22/2010). http://www.canada.com/story_print.html?id=5bd85dd8-112f-4af4-883a-803594922cf3&sponsor=.

[873] 1/19/2010 "Notice of Special Meeting of Shareholders to be Held on February 22, 2010 and Management Information Circular," prepared by Coalcorp Mining Inc. (hereinafter, "2010 Coalcorp Shareholder Notice"), PSI-CI-01-000001 - 030, at 026. See also, e.g., "Coalcorp fights to avoid forced bankruptcy," National Post (1/22/2010), http://www.canada.com/story_print.html?id=5bd85dd8-112f-4af4-883a-803594922cf3&sponsor=.

[874] Subcommittee briefing by Goldman Sachs (9/5/2014); 2010 Coalcorp Shareholder Notice, at PSI-CI-000020.

[875] Subcommittee briefing by Goldman Sachs (9/5/2014).

[876] See, e.g., 1/21/2010 "Coalcorp announces filing of Management Information Circular for the Special Meeting to vote on proposed transaction," Coalcorp press release, http://www.newswire.ca/en/story/703837/coalcorp-announces-filing-of-management-information-circular-for-the-special-meeting-to-vote-on-proposed-transaction;

Goldman would acquire the open-pit mine as well as related mining concessions, infrastructure assets, and contractual rights. Second, Goldman would acquire a nearby undeveloped mine site that also had mining concessions. Third, Goldman would acquire Coalcorp's 8.43% ownership interest in Ferrocarriles Del Norte de Colombia (Fenoco), a company that operated a 226 km railway that transported coal from the Cesar mining region to the seaports over 100 miles away.[878] Railway access was critical to exporting the coal. In addition, as part of the transaction, Coalcorp would assign to a new Goldman subsidiary the supply contract to deliver coal to Constellation Energy.[879]

On March 19, 2010, Coalcorp and Goldman completed the acquisition for about $200 million.[880] Goldman established several legal entities to own and operate the mines and related infrastructure.[881] The key Goldman entity was a Colombian corporation, Colombian Natural Resources I S.A.S. (CNR). CNR and other entities were set up as wholly owned subsidiaries that were ultimately owned by The Goldman Sachs Group, Inc. and Goldman Sachs & Co. LLC.[882] The Boards of Directors of the new entities were comprised exclusively of Goldman employees.[883] Goldman told the Subcommittee that the coal mine was purchased as a merchant banking investment, and the vast majority of its internal documents also characterize the transactions in that manner, although forms filed with the Federal Reserve indicate that Goldman also asserted that its ownership of the Colombian mining operations was permissible under the Gramm-Leach-Bliley grandfather authority.[884]

Goldman told the Subcommittee that, at the time of the acquisition, Goldman intended to make minor changes to the mining operations and, within a short period of time, sell the entire

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"Coalcorp agrees to sell La Francia coal mine to Goldman Sachs," Proactiveinvestors.com (1/7/2010), http://www.proactiveinvestors.com/companies/news/3506/coalcorp-agrees-to-sell-la-francia-coal-mine-to-goldman-sachs-3506.html.

[877] See 2010 Coalcorp Shareholder Notice, at PSI-CI-000001 - 030, at 019 - 020, 026.

[878] See "Management and Discussion Analysis, 2010," prepared by Coalcorp Mining Inc. (hereinafter, "2010 Coalcorp MDA"), at 4, http://www.meliorresources.com/uploads/documents/annualreports/2010%20Annual%20MD&A.pdf (stating Coalcorp sold its 8.43% stake in Fenoco to Goldman as part of the La Francia transaction in March 2010).

[879] See 2010 Coalcorp Shareholder Notice, PSI-CI-000001 - 030, at 020; 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 006. See also 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation by Goldman for the Goldman Board of Directors, FRB-PSI-700011 - 030, at 028 (valuing the contract at about $50 million); "Coalcorp agrees to sell La Francia coal mine to Goldman Sachs," Proactiveinvestors.com (1/7/2010), http://www.proactiveinvestors.com/companies/news/3506/coalcorp-agrees-to-sell-la-francia-coal-mine-to-goldman-sachs-3506.html.

[880] "Management and Discussion Analysis, 2011," prepared by Melior Resources Inc. (formerly Coalcorp Mining Inc.) (hereinafter, "2011 Melior MDA"), at 3-4, http://www.meliorresources.com/uploads/documents/annualreports/Melior-MDA-2011.pdf; 1/29/2010 "Global Commodities Principal Investments: Portfolio Snapshot," prepared by Goldman, FRB-PSI-602254 - 255.

[881] Subcommittee briefing by Goldman Sachs (9/5/2014). See also undated "CNR Structure Chart," prepared by Goldman at the Subcommittee's request, GSPSICOMMODS00046318.

[882] See undated "CNR Structure Chart," prepared by Goldman at the Subcommittee's request, GSPSICOMMODS00046318.

[883] Subcommittee briefing by Goldman Sachs (9/5/2014).

[884] See, e.g., 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10, submitted to the Federal Reserve by Goldman Sachs Group, Inc., GSPSICOMMODS00046301 - 317, at 303 (reflecting that the investment was "permissible under [Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.").

project to Vale S.A., a Brazilian mining company that owned the neighboring El Hatillo mine.[885] That planned sale did not take place.

(c) Operating the Mine

To operate the La Francia mine, CNR retained the same consortium of three companies, known as Consorcio Minero del Cesar S.A.S. (CMC), that Coalcorp had used.[886] CMC was responsible for conducting the mining operations, including hiring the miners and other employees who worked on the site. Goldman also acquired rights to ship the coal out of a Colombian port known as Santa Marta.[887]

During its first two years of operation, the coal mine's exports and revenues increased rapidly. At year-end in 2010, CNR, the Goldman subsidiary that owned the La Francia mine, reported operational revenues from selling the coal at about $66 million.[888] By the end of the next year, 2011, CNR reported that the mine's operating revenues from selling coal had tripled to about $200 million.[889] CNR reported higher revenues even though it had lost its second and third-largest customers, Glencore and Electroandina S.A., which had collectively accounted for about one third of CNR's net operational revenues in 2010.[890] CNR's financial statement showed that the lost revenues had been more than made up by its new and largest customer, Goldman's commodities subsidiary, J. Aron & Company, which accounted for about $74 million of its operating revenues.[891]

Exclusive Marketing Agreement. Once it acquired the mine, Goldman installed CNR as "the exclusive marketing and sales agent," although the terms of the agreement were not formalized until 2011.[892] In September 2011, CNR entered into a formal Marketing Agreement with J. Aron & Co., designating it as CNR's "exclusive agent"[893] to perform the following services:

- "Marketing coal to prospective customers,"
- "negotiating the terms of sale and delivery of coal with prospective customers;"
- "procurement of port services;" and

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[885] Subcommittee briefing by Goldman Sachs (9/5/2014).
[886] See 12/31/11 and 12/31/2010, C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2011 and 2010 CNR Financial Statements"). GSPSICOMMODS00046319 - 365, at 343.
[887] Goldman acquired those port access rights from Vitol in 2010. See "Vitol buys export space at Colombia Santa Marta port," Reuters, Jackie Cowhig (1/25/2010). http://uk.reuters.com/article/2010/01/25/ac-coal-vitol-colombia-idUKLDE60O17F20100125.
[888] See 12/31/11 and 12/31/2010, C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2011 and 2010 CNR Financial Statements"). GSPSICOMMODS00046319 - 365, at 324 (applying 2010 US dollar exchange rate of .000522 as listed on X-rates.com. http://www.x-rates.com/historical/?from=COP&amount=1&date=2010-12-31).
[889] Id. (applying 2011 U.S. dollar exchange rate of .000516 as listed on X-rates.com, http://www.x-rates.com/historical/?from=COP&amount=1&date=2011-12-31).
[890] Id. at 345.
[891] Id.
[892] 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001- 003, at 001.
[893] 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 498.

- "procurement of blending coal."[894]

In other words, under the agreement, Goldman's key commodities trader became the coal mine's sole sales agent.

The next month, October 2011, in a presentation to the Goldman Board of Directors, Goldman's Global Commodities Group reported that, overall, CNR had "[r]amped up production / sales from 1 mt [million metric tons] in 2009 to 2.5 mt in 2011."[895] The presentation stated that CNR had also "[i]nstalled J.Aron Coal Desk as marketing agent, increasing customer base from < 5 in 2009 to > 15 in 2011."[896] The Global Commodities Group presentation also stated: "2011 projected to be the most profitable year since the assets went into production (2005), with revenues forecasted to be >$65 [million]."[897]

Goldman told the Subcommittee that, after the acquisition, J. Aron & Co. purchased about 20% of CNR's coal for itself and sold the other 80% to unrelated third parties.[898] Specifically, Goldman indicated that in 2011, J. Aron & Co. purchased about 710,000 metric tons from CNR for itself and sold about 1.6 million metric tons of CNR coal to third parties, for a total of about 2.3 million metric tons.[899] In 2012, J. Aron & Co. purchased about 775,000 metric tons for itself and sold about 3.5 million metric tons of CNR coal to third parties, for a total of about 4.2 million metric tons.[900] In 2013, the figures were 324,000 metric tons purchased by J. Aron & Co. and 3.4 million metric tons sold to third parties, for a total of about 3.7 million metric tons.[901]

The Colombian coal mine gave Goldman control over a vertically integrated coal operation. Goldman entities mined the coal, transported it by a railway partly owned by Goldman, and delivered it to a port facility controlled by Goldman. Another Goldman entity, J. Aron & Co., negotiated and arranged for 100% of the coal sales. It either bought the coal itself and arranged for its shipment, or sold it to third parties. The coal purchased by J. Aron & Co. was transported on Goldman-chartered ships to either the United States or Europe.

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[894] Id. at 528.
[895] 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation prepared by Goldman for the Goldman Board of Directors. FRB-PSI-700011 - 030, at 028.
[896] Id.
[897] Id.
[898] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008; Subcommittee briefing by Goldman Sachs (9/5/2014). CNR's financial statements indicate that, during 2012, J. Aron & Co. was slated to purchase closer to one-third of its coal. See 2011 and 2010 CNR Financial Statements, at Note 16, at GSPSICOMMODS00046342. In 2014, the amount of coal committed to J. Aron & Co. dropped dramatically to about 275,000 metric tons, likely due to the extended closure of the La Francia mine during 2013, and CNR's reduced production. See 12/31/2013 and 12/31/2012 C.I. Colombian Natural Resources I S.A.S., Financial Statements (hereinafter "2013 and 2012 CNR Financial Statements"), at Note 16, GSPSICOMMODS00046366 - 397, at 391.
[899] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.
[900] Id.
[901] Id.

Setbacks. Despite its increased coal production, customer base, and revenues, Goldman's coal mining operations during 2010 and 2011 also experienced some difficulties.[902] In November 2010, CNR sent Coalcorp a Notice of Claim for indemnification for an alleged $37.4 million in losses from locomotives not being in working condition and from unpaid import value-added taxes.[903] In December, CNR sent Coalcorp a second Notice of Claim for indemnification from $1.1 million in alleged losses due to Coalcorp's failure to provide title to one third of the real property intended to be used for a rail spur.[904] In March 2011, Coalcorp – renamed Melior Resources Inc. in 2011 – settled both claims by paying Goldman-related entities $6.2 million.[905]

In May and August 2010, the Colombian Ministry of the Environment, Housing and Territorial Development issued resolutions recognizing coal-induced air pollution problems in the Cesar region and calling for the relocation of families living in certain areas contaminated by coal dust.[906] Both resolutions explicitly named CNR, among other companies, as needing to reduce air pollution from its mining operations,[907] and identifying it as one of four companies that would have to pay relocation expenses.[908]

In December 2011, the Colombian Ministry of the Environment and Sustainable Development adopted a resolution that suspended new coal mining activities in "high" pollution areas, including the Cesar region where Goldman's coal mine was located, making expansion or sale of those mining operations more difficult.[909]

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[902] Goldman has confirmed that it "does not operate, possess or own on its balance sheet a major investment in any coal mine other than [its Colombian mining operations]." 9/19/2014 letter from Goldman legal counsel to Subcommittee. PSI-GoldmanSachs-16-000001 - 006, at 005.

[903] See "Coalcorp Receives Notice of Claim." Canada Newswire (11/3/2010), http://www.bloomberg.com/apps/news?pid=conewsstory&tkr=CCJ:CN&sid=azvtX.MEk4LY.

[904] See "Coalcorp Receives Notice of Claim." Bloomberg (12/3/2010). http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a0M6GkXe6jhc.

[905] See 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 003 ("Coalcorp paid Goldman Sachs about $6.2 million to settle certain claim relating to the La Francia mine purchase."); Melior Resources Inc, FY 2012 Management and Discussion Analysis, Consolidated Financial Statements, at 5-6, http://www.meliorresources.com/uploads/documents/annualreports/MLR-MDA-Oct16-2012-FINAL.pdf.

[906] See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047330 - 334; and 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translations provided by Goldman); Subcommittee briefing by Goldman Sachs (9/5/2014). See also "Colombia: Coal producers feel out of favour." Mining Journal (5/3/2013), http://www.mining-journal.com/reports/colombia-coal-producers-feel-out-of-favour?SQ_DESIGN_NAME=print_friendly (noting that the issue of "the re-location of three towns in Cesar away from the mining site – Plan Bonito, El Hatillo and El Boqueron" remains "unresolved").

[907] See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment, Housing and Territorial Development, at GSPSICOMMODS00047330 - 334.

[908] See 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, at GSPSICOMMODS00047335 - 341.

[909] See 12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48.294 of 2011, GSPSICOMMODS00047310 - 329 (translation provided by Goldman).

(d) Acquiring the Second Colombian Coal Mine

Despite those difficulties, in 2012, rather than sell its Colombian coal mining operation as planned, Goldman expanded its physical coal activities by purchasing a second coal mine. Goldman told the Subcommittee that before it could sell its mine to Vale S.A. as it had intended, Vale announced plans to sell its coal mine and exit Colombia altogether.[910] Goldman told the Subcommittee that because Vale's mine was so close to the La Francia mine, it decided to purchase it and combine the operations, with a view towards selling the integrated mining operations to a third party in the future.[911]

In May 2012, Vale announced the sales agreement, indicating it would sell Goldman an open-pit working mine, an undeveloped mine site, additional shares in the Fenoco railway, and a port terminal.[912] The second coal mine was known as El Hatillo, and the new port was called Río Córdoba. Goldman's Global Commodities Principal Investments Group again took the lead on the transaction, forming new subsidiaries for the holdings, which were again set up as ultimately wholly owned by The Goldman Sachs Group, Inc. and The Goldman Sachs & Co LLC.[913] Goldman closed on the approximately $400 million acquisition on June 22, 2012.[914]

In 2013, Goldman's Global Commodities group reported to the Goldman Board of Directors that, together, the La Francia and El Hatillo holdings had total coal reserves of about 160 million metric tons and a total production capacity of about six million metric tons per annum.[915] It also informed the Board that CNR had "significant expansion plans," including plans to double the annual output of coal and expanding the site from "2 to 5 open pit operations over the next 4 years."[916]

In the same presentation to the Board, however, the Global Commodities group also stated: "Certain operational issues have arisen."[917]

Operational Issues. The September 2013 presentation identified two operational issues. The first was that, since the acquisition of the first mine, coal prices had declined from about

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[910] Subcommittee briefing by Goldman Sachs (9/5/2014).
[911] Id.
[912] See, e.g., "Vale Sells Colombia Coal Mines to GS-led Group." Reuters, Reese Ewing (5/28/2012), http://www.reuters.com/article/2012/05/29/us-vale-coal-idUSBRE84S00N20120529; "Goldman front-runner for Vale's Colombian coal ops," Reuters. Jack Kimball and Jacqueline Cowhig (2/14/2012). http://www.reuters.com/article/2012/02/14/us-colombia-vale-coal-idUSTRE81D19620120214.
[913] Subcommittee briefing by Goldman Sachs (9/5/2014); 3/31/2013 "Commodity, Energy, E&P, Renewable Energy Equity Investments," chart prepared by Goldman. FRB-PSI-400065 - 070, at 068.
[914] See undated report, "Report of Changes in Organizational Structure," Form FR-Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046304 - 307 (reflecting the June 22, 2012 acquisition of Colombia Purchase Co., S.A.S. by GS Power Holdings LLC and Goldman Sachs Global Holdings LLC); 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008 (indicating the transaction was settled for "cash consideration of approximately $400 million, subject to certain adjustments").
[915] 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090.
[916] Id.
[917] Id.

$113 per metric ton to $90 per metric ton, a drop of 20%.[918] The presentation stated that an additional drop of $5 to $7 per metric ton "may trigger a permanent impairment" of the value of the investment, which was then being carried on Goldman's books at about $590 million.[919]

A second problem identified in the Board presentation involved a January 2013 shipping incident in which a barge owned by another, unaffiliated company released a large amount of coal into Colombian waters.[920] As a result, the Colombian government announced that it would no longer delay compliance with a 2007 law requiring all Colombian ports to install equipment enabling coal to be loaded directly onto ocean-going vessels, without using a barge.[921] The procedure used at most Colombian ports was for coal to be loaded from a port terminal onto a barge, transported farther out to sea, and then transferred from the barge to a larger ship using cranes and open conveyor systems that produced coal dust and coal spills into the water during transfers. The Colombian government imposed a January 2014 deadline for all ports to install direct-loading equipment and stop using barges.[922] Goldman's Commodities group reported to the Goldman Board of Directors that CNR currently "barges coal out to sea in order for it to be loaded onto vessels via floating cranes," and that upgrading its port facilities with direct loading equipment would cost about $220 million.[923] The presentation indicated that CNR was "evaluating alternatives."[924]

While the cost and port equipment issues were serious, additional operational problems affecting the Colombian mines were not mentioned in the Board presentation. For example, in 2010 and 2011, the Colombian government denied requests by CNR and other companies to increase coal mining in the Cesar region, limiting Goldman's expansion plans.[925] Similarly, in August 2012, the Fenoco railway, which transports the coal from Goldman's mines to the ports over 100 miles away, had been shut down for a month due to a pay dispute, slowing coal delivery.[926]

In addition, Goldman, through its subsidiary CNR, became embroiled in an ongoing dispute with the consortium that operated the mines, Consorcio Minero del Cesar (CMC).

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[918] Id. at 091.
[919] Id.
[920] Id.
[921] See 8/15/2007 Decree No. 3083, Colombian Transport Ministry, Official Gazette No. 46,721, GSPSICOMMODS00046536 - 537 (requiring compliance by 6/1/2010); 11/4/2009 Decree No. 4286, President of the Republic of Colombia, GSPSICOMMODS00046538 - 539 (requiring ports to file monthly progress reports); 3/5/2010 Decree No. 0700, Colombian Transport Ministry, GSPSICOMMODS00046540 - 541 (allowing delayed filing of progress reports) (translations provided by Goldman).
[922] See 2011 Law No. 1450, GSPSICOMMODS00046542 (translation provided by Goldman).
[923] 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090.
[924] Id.
[925] 10/8/2014 letter from Goldman Sachs legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 009, at 004; see also12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48,294 of 2011, GSPSICOMMODS00047310 - 329 (translation provided by Goldman); 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translation provided by Goldman).
[926] 10/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 009, at 004. See also "Colombia's Fenoco, Coal Railway Workers Agree on Pay Raise," Reuters (9/18/2013), http://www.reuters.com/article/2013/09/18/colombia-fenoco-pay-idUSL2N0HE2BB20130918.

According to CNR, in November 2012, CMC "informed CNR" that it had assigned the operating contract to a related company, but CNR refused to "recognize the legality of that assignment," rejected invoices from the new company, and essentially stopped paying for work under the contract.[927] In addition, Goldman told the Subcommittee that CNR had become concerned about whether CMC was conducting the mining at the sites in accordance with approved plans or was mining them in a way that could significantly reduce the value of the mines.[928]

In January 2013, the consortium sent a letter declaring CNR in breach of the contract and suspended work at the mine.[929] That same day, miners and other employees who worked for the consortium walked off the job, abandoning the mine and extensive mining equipment.[930] CNR described the situation in its certified financial statement as follows:

> "On the 21st of January of 2013, in a sudden manner, Consorcio Minero del Cesar S. A. S sent a letter announcing the unilateral termination of the La Francia Mine's operation Contract, based on the alleged breach of the Company. In parallel, the mine's activities were suspended on the same day and all the machinery of the consortium and of its members was abandoned on the field. During the next two weeks, the inventory of coal on the yards was shipped to the port, and from then onwards the mine's activity was completely halted. On the 15th of April a group of women and children who [were] said to be relatives of the CMD'S employees blocked the access to the camp of the El Hatillo mine. In this way, the conflict at the La Francia mine irradiated also to that mine .... CNR I started several legal actions for the unblocking of the mine, including protection petitions and police proceedings filed with the mayor of El Paso, as well as a request of administrative protection before the National Mining Agency ANM. Likewise, a large number of letters was sent to request the intervention of police and military authorities, the Governor of Cesar, the office of the Attorney General and the People's Defender Office, as well as to the Mines and Interior Ministries, among others."[931]

CNR stated that the blockade of the mine continued, and the mine remained closed for the next nine months, until September 22, 2013:

> "The total blockade of the La Francia mine lasted for 244 days, until the 22nd of September of 2013, and it was lifted thanks to a private agreement in which CNR I paid a cash bonus of $20,000 to each one of the persons that were still protesting. Once CNR I resumed the control of the mine, the activities to recover the productive areas were started, particularly the pumping of water from the pit."[932]

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[927] See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 394.
[928] Subcommittee briefing by Goldman Sachs (9/5/2014).
[929] See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374.
[930] Id.
[931] Id.
[932] Id.

Goldman told the Subcommittee that the payments made by CNR to end the blockade were by check rather than in cash.[933] Goldman further told the Subcommittee that 120 current or former employees received the USD $10,000 checks.[934] Shortly thereafter, CNR hired a new mine operator, Excavaciones y Proyectos de Colombia S.A.S. (EPSA).[935]

All told, as a result of the dispute with CMC, the La Francia mine produced no coal from January 21 through September 22, 2013.[936] During the shutdown, Goldman used coal from an affiliate to meet CNR's coal supply contracts.[937] When those supplies ran out, some supply contracts were cancelled or postponed.[938] Still another supply contract required CNR to make a $237,000 payment to settle the contract breach.[939]

Many of the operational problems with the mines were not identified in the 2013 presentation made by the GS Commodities Group to the Goldman Board of Directors, including the nine-month closure of one mine, the legal dispute with the mine operator, the mine blockade by women and children, the attempts to obtain police and military assistance, the payments to protestors, the cancellation, postponement, and settlement of coal supply contracts, and the associated legal expenses.[940] At the same time, those developments increased the financial, operational, environmental, and catastrophic event risks associated with the mining venture, presenting issues that do not normally confront a bank or bank holding company.

(e) Current Status

Operational and environmental problems at the Colombian mines have continued throughout 2014. Coal prices have remained volatile. Even after the La Francia mine reopened, the labor dispute at the El Hatillo mine continued with a labor union representing about 40% of the employees.[941] After years of negotiations, "CNR has requested the Ministry of Labor of Colombia to convene an arbitration panel to decide the dispute."[942] In January 2014, the Colombian environmental law precluding the use of barges to load coal onto ships took effect. Since then, Goldman has been precluded from using its port, which has no direct-loading equipment.[943] Goldman told the Subcommittee that, as a result, "since January 1, 2014, CNR has not exported any coal it produced in Colombia."[944]

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[933] 10/30/2014 letter from Goldman legal counsel to Subcommittee. PSI-GoldmanSachs-24-000001 - 003, at 001 (explaining that the amount was in U.S. dollars, whereas the amount reflected in the certified financial statement was in thousands of Colombian pesos).
[934] Id.
[935] 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 375.
[936] Id..
[937] Id. at Note 1.
[938] Id.
[939] Id.
[940] See 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090 - 091.
[941] 10/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-19-000001 - 000009, at 004.
[942] Id.
[943] Subcommittee briefing by Goldman Sachs (9/5/2014).
[944] 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 004.

According to CNR's financial statement, during 2013, Goldman considered several alternatives to gain access to a port with a direct-loading system.[945] CNR considered "the possibility to load its coal at Puerto Nuevo which, being a public port, had to offer access to third parties."[946] Just days before the law was to go into effect, however, the Puerto Nuevo port announced that it had established an application process which CNR would have to complete to use the port facilities.[947] According to CNR, the new application process was inconsistent with Colombian law and effectively precluded CNR from being approved.[948] CNR has not yet been permitted to use the public port. Goldman also entered into negotiations with Drummond Corp., a U.S. company with major coal operations in Colombia, over using its port for CNR coal exports, but no agreement has yet been reached.[949] In addition, Goldman obtained government permission to upgrade its Río Córdoba port with direct-loading equipment,[950] but Goldman told the Subcommittee that the cost was too high to go forward.[951]

Because CNR cannot currently export any coal, it has reduced its coal production to levels well below amounts established in CNR's agreement with the Colombian National Mining Agency.[952] While CNR has requested relief from its production obligation due to lack of port access, as of March 2014, the National Mining Agency had not yet agreed.[953] If the Colombian government were to take action against CNR for underproduction of coal, Goldman could lose some or all of its mining rights. In the meantime, while Goldman continues to seek port access, its mines have been operating at reduced rates, and the coal has been accumulating on site.[954] Goldman told the Subcommittee that CNR is storing the coal in the mine's yards.[955]

In 2013, CNR incurred losses due, in part, to the mine shutdown, reduced sales, and declining coal prices,[956] but Goldman may not have lost money on its investment. In a September 2013 presentation to the Goldman Board of Directors, the Global Commodities Group reported that to offset declining coal prices and CNR's declining market value, it had entered into a "short coal hedge" which had to date produced "accounting gains" of $246

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[945] 2013 and 2012 CNR Financial Statements. at Note 1. GSPSICOMMODS00046366 - 397, at 375.
[946] Id.
[947] Id.
[948] Id.
[949] Id.; 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 004.
[950] Subcommittee briefing by Goldman Sachs (9/5/2014). See also "Colombia Oks Goldman Sachs' Direct Loading Coal Port Upgrade Works," Platts Coal Trader International. Jaime Concha (8/13/2013), PSI-PlattsGoldmanCoalStory(8-13-13)-000001.
[951] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008; Subcommittee briefing by Goldman Sachs (9/5/2014).
[952] See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 376.
[953] Id.
[954] Subcommittee briefing by Goldman Sachs (9/5/2014).
[955] Id.; 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 376. See also "Goldman Sachs miner halts coal exports from Colombia," Reuters, Peter Murphy (1/9/2014), http://finance.yahoo.com/news/exclusive-goldman-sachs-miner-halts-210300373.html.
[956] See, e.g., 2013 and 2012 CNR Financial Statements, Income Statement, GSPSICOMMODS00046366 - 397, at 369.

million.[957] Those gains may have more than offset the CNR losses. Goldman is also considering selling the mines.[958]

(3) Issues Raised by Goldman's Coal Mining Activities

Goldman's coal mining activities illustrate a number of concerns related to financial holding company involvement with complex physical commodity businesses. In just three years, Goldman's coal mines experienced contractor disputes, labor unrest, equipment issues, mine and railway shutdowns, and flooding, events in addition to the many operational, environmental, and catastrophic event risks inherent in coal mining. Had those developments combined into a worst case scenario, they could have imposed severe financial consequences on Goldman – one that in an extreme case could have necessitated a Federal Reserve, or even U.S. taxpayer, rescue.

The Colombian coal venture also disclosed how the coal mines' merchant banking status – as a short-term investment that must be sold within ten years – created a disincentive for Goldman to pay for long-term infrastructure investments – such as direct-loading port facilities – needed to operate the mines in a safe and environmentally sound manner. Choosing not to make those infrastructure investments, in turn, deepened Goldman's risk of incurring an operational or environmental disaster in Colombia. Additional concerns illustrated by Goldman's coal mining venture involve its legal authority to enter the coal mining business to begin with, and the conflicts of interest that arise when a financial holding company controls coal supplies and transport, while trading coal-related financial instruments.

(a) Catastrophic Event Risks

Since acquiring its first Colombian coal mine in 2010, Goldman has incurred multiple operational, environmental, and catastrophic event risks that rarely confront traditional banks or financial holding companies. When asked by the Subcommittee to describe the types of risks that can affect coal operations, one Goldman representative summed it up by saying: "Everything that's happened to us."[959]

Operational, Environmental, and Catastrophic Event Risks. Colombia's history is marked with mining collapses, mining fatalities, and a variety of coal-related incidents and accidents. In three years, Goldman's Colombian coal mining operations experienced operational problems that raised the risk of a similar mining mishap affecting the La Francia or El Hatillo mines, including disagreements with the mine operator over how to mine the coal, abandonment of mining equipment on site, an extended mine shutdown, water flooding the mines, and women and children blocking mine access. Dangerous conditions and contractor and labor disputes, by their nature, intensify the risk of a catastrophic event, although none has resulted to date.

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[957] 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI-400077 - 098, at 091.

[958] See "Mick the Miner in talks to buy Goldman's Colombian coal," The Sunday Times, Danny Fortson (8/17/2014), http://www.thesundaytimes.co.uk/sto/business/Industry/article1447559.ece.

[959] Subcommittee briefing by Goldman Sachs (9/5/2014).

Goldman's operational problems were in addition to ongoing environmental problems. Colombia has a long history of coal-related environmental problems, including air and water pollution. Goldman had already recognized that mining-related environmental issues require special attention, as indicated in an internal, non-public Goldman memorandum entitled, "Metals and Mining: Background to Environmental and Social Due Diligence."[960] The Goldman memorandum warned that, as a result of mining operations, "[l]egal claims against the company might include fines, penalties, prison sentences for staff (arising from pollution, compensation from communities that have lost land or assets), significant delays in construction/development of projects/ infrastructure, [and] impaired ability to access new assets based on previous performance."[961]

The La Francia and El Hatillo mines had already been identified as producing coal-related environmental problems before Goldman took ownership of them. As a result, a 2010 Colombian resolution explicitly named CNR, among other corporations, as having a responsibility to reduce the air pollution associated with its mining operations and to contribute to an ongoing effort to relocate three communities to a less polluted area.[962] In December 2011, the Colombian government identified the Cesar region, which is the region where the Goldman mines are located, as a "high pollution area," and limited the expansion of coal mining operations there.[963] Those actions by the Colombian government imposed additional costs and constraints on Goldman's coal mining activities.

Another environmental development, involving water pollution, also dramatically impacted Goldman's coal operations. In January 2013, an affiliate of Drummond Company Inc. was involved in a coal spill. Due to rough seas, a Drummond barge containing more than 1,800 tons of coal became partially submerged outside of the Drummond Port, and was towed to shallow water.[964] In connection with its efforts to salvage the ship and its cargo, the crew released a large amount of coal into Colombian waters, an event that was caught on film.[965] In response, the Colombian government suspended Drummond's ship-loading license until it submitted an improved spill contingency plan.[966] As a result, Drummond lost significant

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[960] See undated memorandum. "Metals and Mining: Background to Environmental and Social Due Diligence," prepared by Goldman. FRB-PSI-300221 - 230.

[961] Id. at 225.

[962] See 5/20/2010 Resolution No. 0970, Colombian Ministry of the Environment. Housing and Territorial Development, GSPSICOMMODS00047330 - 334; and 8/5/2010 Resolution No. 1525, Colombian Ministry of the Environment, Housing and Territorial Development, GSPSICOMMODS00047335 - 341 (translations provided by Goldman).

[963] See 12/22/2011 Resolution No. 0335, Colombian Ministry of the Environment and Sustainable Development, Official Gazette No. 48,294 of 2011. GSPSICOMMODS00047310 - 329 (translation provided by Goldman).

[964] See 2012 "Statement by Drummond Ltd. – Barge Accident Internal Investigation Results," prepared by Drummond Company Inc., http://www.drummondco.com/barge-accident-internal-investigation-results/.

[965] See "Colombia Suspends Drummond's Coal Ship-Loading License," Bloomberg, Alex Emery & Oscar Medina (2/6/2013), http://www.bloomberg.com/news/2013-02-06/colombia-suspends-drummond-ship-loading-license-agency-says.html.

[966] Subcommittee briefing by Drummond Company, Inc. (9/16/2014). See also "Colombia Lifts Drummond Coal Export Ban," Colombia Reports, Joey O'Gorman (3/1/2013), http://colombiareports.co/colombia-lifts-drummond-coal-export-ban/; "The Colombian Mining Locomotive Has Halted," Environmental Justice Organisations, Liabilities and Trade, Joan Martinez-Alier (2/14/2013), http://www.ejolt.org/2013/02/the-colombian-mining-locomotive-has-halted/.

revenues while also being required to pay at least $3.6 million in fines.[967] In addition, the Colombian government imposed the January 2014 deadline on port compliance with the 2007 direct-loading law that had not been enforced on a mandatory basis until then. In response, Drummond paid $360 million to upgrade its port with direct-loading equipment.[968] The 2013 Drummond shipping accident graphically demonstrated how environmental disasters can lead to regulatory actions, fines, legal expenses, lost profits, and reputational damage. The same types of environmental disasters create catastrophic event risks for Goldman's coal mining operations.

Still another category of catastrophic event risk confronting Goldman's mining operations involves the labor unrest at its mines. Labor relations in Colombia have long been volatile and politically sensitive, especially with respect to coal mining. In 2013, the months-long human blockade by women and children at the Goldman mines created a potentially explosive situation. During the dispute, CNR asked the mayor, police, military, and other Colombian authorities for assistance.[969] Had those requests been granted, actions to end the blockade could have produced a worst case scenario involving arrests, injuries, and a political backlash that, potentially, could have led to condemnation of Goldman, not only in Colombia, but in other parts of the world.

Insufficient Capital and Insurance. While the risk that a catastrophic event will cause severe damages to Goldman's coal mines is remote, it must be addressed to protect U.S. taxpayers from being asked to step in after a disaster strikes. The primary tool used by financial holding companies to address catastrophic event risk is to allocate sufficient capital and insurance to cover potential losses. According to a 2012 Federal Reserve analysis, however, Goldman has failed to allocate sufficient capital or insurance to cover those potential losses.[970]

As indicated in the prior section, Goldman has strenuously denied any liability for costs associated with a catastrophic event involving its physical commodity activities, which may have contributed to its failure to allocate sufficient capital and insurance to cover potential losses.[971] As explained earlier, Goldman has attempted to limit its liability by structuring its physical commodity activities to take place through subsidiaries, but Goldman's reliance on legal structures provides no guaranteed shield from liability, lawsuits, or legal expense.[972] Moreover,

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[967] "Colombia Bans Coal Loading by 2nd-Biggest Producer Drummond," Bloomberg. Andrew Willis and Oscar Medina (1/14/2009), http://www.bloomberg.com/news/2014-01-08/drummond-s-coal-loading-halted-as-colombia-pulls-port-license.html.

[968] See 3/31/2014 Drummond press release, "Drummond Restarts Port Operations with an Investment of US$360 Million in a Modern Direct Ship Loading System." http://www.drummondco.com/drummond-restarts-port-operations-with-an-investment-of-us360-million-in-a-modern-direct-ship-loading-system/.

[969] See 2013 and 2012 CNR Financial Statements, at Note 1, GSPSICOMMODS00046366 - 397, at 374.

[970] See 2012 Summary Report, at FRB-PSI-200477 – 510, at 498, 509.

[971] See discussion in section on uranium, above.

[972] See id., as well as the Federal Reserve's analysis in its Advanced Notice of Proposed Rulemaking, "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities," 79 Fed.Reg. 3329, at 3331 (daily ed. Jan. 21, 2014) ("Recent disasters involving physical commodities demonstrate that the risks associated with these activities are unique in type, scope, and size. In particular, catastrophes involving environmentally sensitive commodities may cause fatalities and economic damages well in excess of the market value of the commodities involved or the committed capital and insurance policies of market participants."); 2012 Summary Report, at FRB-PSI-200477 – 510, at 489 (FRBNY Commodities Team wrote: "There is no available historical precedent to support .. the effectiveness of the 'legal structure'

Goldman has opened itself up to potential liability under a Bestfoods analysis[973] by the extent of its involvement with CNR operations. Its key commodities subsidiary, J. Aron & Co., controls 100% of CNR's coal marketing and sales, manages its port procurements and coal blending operations, and is one of CNR's largest purchasers of coal.[974] Goldman indicated to the Subcommittee that its dispute with CNR's mine operator, CMC, stemmed in part from its concern that CMC was not following a Goldman-approved plan regarding how the CNR mining operations should be conducted.[975] Goldman also appears to have made the decision not to pay for direct-loading equipment at the primary port used to export the coal. Those and other actions suggest that Goldman personnel were involved with the day-to-day operations and management of the Colombian coal mining operations, increasing Goldman's potential liability in the event of a catastrophic event.

Because a court in the United States, Colombia, or another jurisdiction might hold Goldman liable for the actions of its mining-related entities and any disaster involving them, Goldman should, but has not, allocated sufficient capital and insurance to cover potential losses.[976] According to a Federal Reserve analysis in 2012, as explained in the earlier section, the potential losses associated with an "extreme loss scenario" affecting Goldman or its peer institutions would exceed the capital and insurance coverage at each financial holding company by $1 billion to $15 billion.[977] That shortfall leaves the Federal Reserve, and U.S. taxpayers, at risk of having to provide financial support to Goldman should a catastrophic event occur.

Short Term Disincentive. Still another issue raised by Goldman's coal mining operations is the effect of its relatively short-term investment horizon. Goldman holds CNR and its other Colombian subsidiaries as a merchant banking investment that must be sold within ten years, which for the La Francia mine means by 2020. Currently, that is a six-year investment horizon. When the Colombian government required its ports to install direct-loading equipment to reduce coal-related pollution by January 2014, Drummond Inc., a U.S. company with a long history of coal mining in Colombia, spent $360 million to upgrade its port.[978] CNR did not, because as Goldman explained to the Subcommittee: "CNR evaluated the prospect of upgrading the Rio Cordoba port facilities to make them compliant with the direct-loading regulations but determined that it was not economically feasible to pursue such an initiative."[979] Goldman calculated the cost of upgrading the port at about $220 million.[980] It decided spending that amount of money to upgrade the port in Colombia did not make economic sense.

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mitigation strategy, rathe[r] there have been cases where a company using third part[y] vendors was itself held liable for environmental damage.").

[973] See United States v. Bestfoods, 524 U.S. 51 (1998).

[974] See 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 498.

[975] Subcommittee briefing by Goldman Sachs (9/5/2014).

[976] See prior analysis; 2012 Summary Report, at FRB-PSI-200477 – 510 , at 498, 509.

[977] Id.

[978] See 3/31/2014 Drummond press release, "Drummond Restarts Port Operations with an Investment of US$360 Million in a Modern Direct Ship Loading System," http://www.drummondco.com/drummond-restarts-port-operations-with-an-investment-of-us360-million-in-a-modern-direct-ship-loading-system/.

[979] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.

[980] See 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 091.

According to an environmental risk management expert consulted by the Subcommittee, that type of financial calculus is representative of a broader phenomenon taking place across the United States and around the world.[981] A number of large financial holding companies have made merchant banking investments in industrial facilities, such as power plants, pipelines, natural gas facilities, and refineries, that may require expensive investments to operate in a safe and environmentally sound manner. To the degree the financial holding companies plan to hold those facilities for relatively short periods of time, they may be less inclined to dedicate the financial resources, time, and expertise needed for operational and environmental improvements. According to the expert, in general, the payback period for such improvements tends to be long term, which can be in direct tension with the financial holding company's goal of realizing short term profit targets and maximizing immediate investment returns.[982] The reluctance to make improvements places the financial holding companies at potentially greater risk of environmental and financial consequences should a mishap arise when compared to peers that upgrade their infrastructure.

In the expert's view, the transitory nature of merchant banking investments suggests that the financial holding companies are betting on the probability that a facility in which they are invested will not face a financially material catastrophic event during the years in which that physical asset forms part of their portfolio.[983] Of particular concern is whether, in so doing, the financial holding companies are actively limiting disclosure of the potential long-tailed environmental risk associated with their investments, and also failing to adequately hedge their financial responsibilities should an environmental event arise.[984]

The expert pointed out the existence of established case law that presumes a legal shield between a parent or holding company and its subsidiary facility. However, she also cautioned that recent events suggested a potentially shifting landscape with respect to the standards and conditions under which a corporate parent may be held financially responsible for the actions of its subsidiary following a catastrophic environmental event. This increased uncertainty calls into question reliance by the financial holding companies on a legal shield as a reasonable risk management strategy to hedge the consequences from a catastrophic environmental event. To the degree such a shield fails, and insufficient resources exist for the financial holding companies to meet their financial responsibilities, then the burden for responding to an environmental incident may well rest with U.S. taxpayers and the general public.[985]

Still another concern is whether financial holding companies that delay or avoid infrastructure investments may gain an unfair, short-term competitive advantage over market participants who do make long-term investments in infrastructure. Equally troubling is whether decisions by financial holding companies to delay or avoid infrastructure investments may pressure its competitors to delay or skimp on needed infrastructure as well.

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[981] Subcommittee briefing by Chiara Trabucchi, Principal at Industrial Economics, Inc. an expert in financial economics and environmental risk management (10/6/2014).
[982] Id.
[983] Id.
[984] Id.
[985] Id.

If the bet by a financial holding company is lost and a catastrophic event were to take place, the affected financial holding company could be confronted with billions of dollars in damages. It could also start to lose customers and counterparties due to perceptions regarding its liability for those damages, or it could be forced to accept higher costs to convince third parties to bear the added credit risk of doing business with the financial holding company, its subsidiaries, and its bank. As the financial crisis demonstrated, even a large, well-capitalized financial institution can experience liquidity problems that it cannot overcome without financial assistance from the Federal Reserve or, ultimately, U.S. taxpayers.

In September 2013, Goldman's Global Commodities Group told the Goldman Board of Directors that CNR had "significant expansion plans" for Colombia, including plans to double the annual output of coal at the mines and expand from "2 to 5 open pit operations over the next 4 years."[986] To protect U.S. taxpayers, the Federal Reserve should ensure Goldman allocates sufficient capital and insurance to cover potential losses from a catastrophic event affecting those coal mines in Colombia.

(b) Merchant Banking Authority

A second set of completely different issues goes to Goldman's legal authority to be in the coal mining business at all. Goldman has indicated that the legal foundation for its Colombian mine operations is the Gramm-Leach-Bliley merchant banking authority.[987] Goldman's extensive relationships with its Colombian coal mining operations raise questions, however, about the extent to which they qualify as merchant banking investments.

The law does not require a financial holding company to notify or obtain prior approval from the Federal Reserve for a merchant banking investment.[988] Rather, a company simply makes the investment, and asserts its authority to do so after the investment is made. If the Federal Reserve determines that the investment does not meet the qualifications for merchant banking authority, then the financial holding company may assert other authority for the investment.[989] If the investment is viewed as not qualifying for any authority, then the Federal Reserve may force divestiture.[990]

In this case, Goldman told the Subcommittee that it did not notify or obtain prior permission from the Federal Reserve before buying the Coalcorp and Vale coal mining

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[986] 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 090.

[987] Subcommittee briefing by Goldman Sachs (9/5/2014). See also, e.g., 7/25/2012 "Presentation to Firmwide Client and Business Standards Committee," (hereinafter 2012 Firmwide Presentation"), by Goldman Global Commodities group, FRB-PSI-200984 - 1043, at 1000 (indicating CNR investment was a merchant banking asset). Compare with 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10 filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301 - 317, at 303 (stating that the investment was "permissible under[|Bank Holding Company Act Section] 4(o), but investment complies with the Merchant Banking regulations.").

[988] Subcommittee briefing by the Federal Reserve (11/27/2013).

[989] Id.

[990] Id. See also earlier discussion in Chapter 3, for example, regarding JPMorgan's assertion of legal authority to retain Henry Bath & Sons, Inc.

operations.[991] After making each of the two acquisitions, Goldman filed FR Y-10 forms with the Federal Reserve, which are used to alert the agency to changes in the financial holding company's organizational structure and, in this case, provided notice that Goldman had established new subsidiaries in Colombia.[992] Through the filing of the forms, Goldman alerted the Federal Reserve to its investments shortly after they were made. It appears, however, that the Federal Reserve examiners were likely unaware of the extent of Goldman's involvement with the day-to-day operations with its Colombian subsidiaries.

To qualify as a merchant banking investment, the investment must meet a number of criteria, including that the financial holding company must not "routinely manage or operate" the company in which it has made the investment.[993] Goldman has acknowledged this limitation in internal materials.[994] In this case, Goldman installed its own employees as the directors of the boards of its Colombian subsidiaries; no non-Goldman directors were selected. Goldman also ensured that it had a formal right to approve important decisions.[995]

In addition, Goldman's key commodities subsidiary, J. Aron & Co., became CNR's "exclusive" agent to market, negotiate the terms of sale, and arrange for the delivery of all of the coal produced in Colombia.[996] Goldman reported to its Board of Directors in 2011, that J. Aron & Co. had increased CNR's customer base from less than five to more than fifteen customers.[997] J. Aron & Co. was also given exclusive authority to procure "port services" for CNR – services critical to the export of CNR coal – as well as exclusive authority to procure "coal blending" services for CNR, which are critical to ensuring the quality of the coal to be sold.[998] From at least 2011 to 2013, before CNR's exports stopped, J. Aron & Co. used its authority to exercise complete control over CNR's mining output, buying about 20% of the coal for itself and negotiating and effectively controlling the sale of the other 80% as well.[999] In addition, J. Aron

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[991] Subcommittee briefing by Goldman Sachs (9/5/2014).

[992] See 4/14/2010 "Report of Changes in Organizational Structure," Form FR Y-10, filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046301-317 (reflecting the March 19, 2010 acquisition of Colombian Nautural Resources I, S.A.S. by GS Power Holdings LLC); undated "Report of Changes in Organizational Structure," Form FR Y-10, filed by The Goldman Sachs Group, Inc. with the Federal Reserve, GSPSICOMMODS00046304 - 307 (reflecting the June 22, 2012 acquisition of Colombia Purchase Co., S.A.S. by GS Power Holdings LLC and Goldman Sachs Global Holdings LLC.).

[993] 12 U.S.C. §1843(k)(4)(H)(iv); 12 C.F.R. §225.171 (a)-(b), (e).

[994] See, e.g., 2012 Firmwide Presentation, FRB-PSI-200984 - 1043, at 1000 (identifying CNR as a merchant banking asset and noting that "Firm personnel not permitted to engage in 'routine management' absent extraordinary circumstances" and "Merchant Banking authority not available for investments that are extension of firm's own activities").

[995] See 1/29/2010 "Global Commodities Principal Investments: Portfolio Snapshot," prepared by Goldman, FRB-PSI-602257.

[996] See 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 498; see also 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 - 003 at 001. Goldman has told the Subcommittee that it did not discuss with the Federal Reserve its "intention to act as CNR's agent/broker to market coal." 9/19/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-16-000001 - 006, at 005.

[997] See 10/28/2011 "Global Commodities Review of Acquisitions: Colombian Natural Resources," part of a presentation prepared by Goldman for the Goldman Board of Directors, FRB-PSI-700011-030, at 028.

[998] 9/26/2011 "Marketing Agreement" between C.I. Colombian Natural Resources I SAS and J. Aron & Company, GSPSICOMMODS00046496 - 530, at 500.

[999] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 008.

& Co. appears to have arranged to buy coal at prices that were, at times, materially lower than the prices charged to unaffiliated customers.[1000]

Another sign of Goldman's extensive involvement with CNR was the representation to the Subcommittee that part of CNR's dispute with its mining contractor, CMC, stemmed from a concern about whether CMC was implementing plans approved by Goldman on how the mining should be conducted to preserve the value of the sites.[1001] Depending upon the extent to which Goldman's involved itself in the details of CNR's mining activities via Goldman-approved plans and CNR implementation of those plans, Goldman may have been exercising a level of control beyond what is permitted for a merchant banking portfolio company. Still another sign of Goldman's control over CNR was its role in deciding against spending $220 million to upgrade CNR's port with direct-loading equipment. While that decision is not a routine management matter, its dramatic impact on CNR's day-to-day operations and the reality that Goldman was the only possible source of financing for that investment suggest Goldman was exercising significant influence over CNR's operations.

Still another piece of evidence of the close relationship between Goldman and CNR involves Goldman's hedging decisions. In its 2012 Summary Report, the FRBNY Commodities Team wrote: "Goldman avoids the appearance of overt control of its coal mine business by not hedging its underlying coal exposure to maintain legal protection."[1002] In other words, Goldman had indicated to the Federal Reserve that it used a subsidiary as the direct owner of its coal mining operations and didn't hedge its coal exposures, as a way of demonstrating the legal distinction between the financial holding company and its affiliate.[1003] Internal Goldman documents indicate, however, that Goldman did, in fact, use hedging to offset its coal exposure and the reduced value of its CNR holdings.[1004] In a 2013 presentation to the Goldman Board of Directors, the Goldman Global Commodities Group reported that it held a "short coal hedge" to offset declining coal prices and CNR's declining market value, and that the hedge had produced "accounting gains" of $246 million.[1005] Goldman's coal-related hedge is one more sign of the close links between Goldman and CNR.

Goldman personnel appear to have been involved with CNR's day-to-day marketing, sales negotiation, procurement of coal blending and port services, and export decisions, activities that appear to involve Goldman in the routine management of the company in the "ordinary course of business." Drummond, Inc., a U.S. company that is Colombia's second-largest

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[1000] See discussion above. See 2011 and 2010 CNR Financial Statements, at Note 16, at GSPSICOMMODS00046342.
[1001] Subcommittee briefing by Goldman Sachs (9/5/2014).
[1002] 2012 Summary Report, at FRB-PSI-200477 – 510, at 489.
[1003] Id.
[1004] Goldman legal counsel told the Subcommittee that the hedge was consistent with "the shareholder of a portfolio company … implement[ing] hedges to protect it against the possibility that the value of its investment may decline as a result of changes in the prices of commodities produced by the portfolio company." 11/4/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-25-000001 – 003, at 002. That said, the Goldman-prepared presentation noted that "[g]ains in coal prices would result in hedge losses but would not result in a mark up of the coal mine asset value." 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 091.
[1005] 9/2013 "Global Commodities & Global Special Situations Group Presentation to the Board of Directors of The Goldman Sachs Group, Inc.," prepared by Goldman, FRB-PSI400077 - 098, at 091.

producer of coal, told the Subcommittee that Drummond conducts its own marketing, sales, and shipping arrangements.[1006] When asked whether it ever outsourced those functions, Drummond representatives responded that producing, marketing, and selling coal was its business. Yet, Goldman's wholly-owned portfolio companies in Colombia have "outsourced" 100% of those day-to-day functions to Goldman's primary commodities trading subsidiary. Goldman further entwined itself with CNR by approving mining plans, controlling major investment decisions, and hedging its exposure to CNR's declining market value.

The Federal Reserve has authorized financial holding companies, in connection with their merchant banking activities, to impose a limited set of restrictions on the portfolio companies in which they have invested, so long as the restrictions address matters that are outside the scope of ordinary business, such as restricting the portfolio company's authority to fundamentally change its capital or debt structure, or fundamentally alter its business without the approval of the holding company.[1007] The Subcommittee is unaware of any Federal Reserve guidance, however, that would permit a financial holding company to control 100% of a portfolio company's marketing and sales. To the contrary, when the Federal Reserve discovered that JPMorgan was marketing Henry Bath warehousing services to clients as an integral part of its overall commodity-related services, the Federal Reserve disallowed JPMorgan's treatment of Henry Bath as a separate merchant banking investment and required JPMorgan to divest itself of the holding.[1008]

According to the Federal Reserve, in 2010 – more than a year before the formal marketing contract was signed between J. Aron & Co. and CNR – Goldman assured its examiners that it was taking care not to become involved in the daily management and operation of its portfolio companies, in connection with its efforts to use legal structures to shield the holding company from legal liability.[1009] Goldman's statements, however, appear inconsistent with the actual level of involvement of Goldman personnel in the day-to-day activities of CNR. To clarify the scope of the merchant banking authority, the Federal Reserve should analyze and determine whether Goldman's level of involvement with CNR, like JPMorgan's level of involvement with Henry Bath, disqualifies CNR as a merchant banking investment.

Should the Federal Reserve disallow CNR as a merchant banking investment, Goldman might try to assert that its coal mining activities are still permissible under the Gramm-Leach-Bliley grandfathering authority. But Goldman has already admitted that, prior to the statutory trigger date in 1997, it did not trade coal, either physically or financially. In light of that admission, and the fact that Goldman purchased the Colombian coal mines after it became a bank holding company, there should be no reason for the Federal Reserve to treat CNR as a grandfathered activity protected from divestment.

[1006] Subcommittee briefing by Drummond Company, Inc. (9/16/2014).

[1007] See earlier discussion in Chapter 3; 12/21/2001 letter from Federal Reserve to Credit Suisse First Boston, FRB-PSI-301593 - 601, at 596 - 597.

[1008] See discussion of Henry Bath warehouses in Chapter 3, above. See also 2012 Summary Report, at 505; undated but likely 2013 "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 300 [sealed exhibits].

[1009] See 3/17/2010 "Minutes of GS Commodities Review Legal Meeting," prepared by Federal Reserve Bank of New York, FRB-PSI-602360 - 370, at 361 [sealed exhibit].

(c) Conflicts of Interest

A final set of issues involves potential conflicts of interest. Goldman trades coal in both the physical and financial markets at the same time, using the same traders sitting at the same coal trading desk, generally executing those trades through J. Aron & Co. CNR's activities provide those traders with access to commercially valuable, non-public information about coal operations in Colombia, the largest exporter of coal to the United States, including information about coal production, labor disputes, regulatory actions, port facilities, and coal shipments. The J. Aron traders handling CNR's marketing, sales, and shipments are also active in physical and financial coal markets. The fact that Goldman shorted coal in 2013, explained its actions internally as a response to declining coal prices and CNR's declining market value, and, by September 2013, booked accounting profits from that short position of nearly $250 million, suggests a close connection between its financial trading and physical coal activities. That Goldman's coal traders may be in the position to use the non-public information obtained from CNR to inform their financial trades with counterparties lacking the same access is troubling.

(4) Analysis

All of the financial holding companies examined by the Subcommittee were heavily involved with coal trading, although not with coal mining. Goldman's four-year experience with investing in open-pit coal mines in Colombia exposed a litany of operational, environmental, and catastrophic event risks to the holding company, exacerbated by a mine shutdown, contractor disputes, abandoned mining equipment, flooded mines, labor unrest, environmental regulatory actions, port access problems, and declining coal prices. Goldman's control, through J. Aron & Co., over 100% of CNR's coal marketing, sales and deliveries, among other activities, increases the potential for Goldman to be held legally liable in the event of a catastrophic event and underscores the need for it to allocate increased capital and insurance to cover potential losses.

The same activities raise questions about whether Goldman is inappropriately relying on the Gramm-Leach-Bliley merchant banking authority to justify Goldman's entry into the coal mining business. Potential conflict of interest issues also call out for additional oversight and preventative safeguards. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

D. Goldman Involvement with Aluminum

After it became a bank holding company in 2008, in addition to expanding its physical commodity activities involving uranium and coal, Goldman substantially increased its involvement with aluminum. In 2010, it purchased Metro International Trade Services LLC (Metro), owner of a global network of warehouses that store actual metal, including aluminum. Metro's warehouses are approved by the London Metal Exchange (LME) to store metals traded on its exchange. Under Goldman's ownership, Metro implemented practices to aggressively attract and retain aluminum in its Detroit warehouses.

Over the next few years, Metro loaded aluminum into its Detroit warehouses at an historic rate, building a virtual monopoly of the U.S. LME aluminum storage market. Metro attracted the aluminum in part by paying "freight incentives" to metal owners to store their metal in the Detroit warehouses. In addition, Metro entered into "merry-go-round" transactions with existing warehouse clients in which it paid them millions of dollars in incentives to join or stay in the exit line, known as the "queue," to load out metal, move the metal from one Metro warehouse into another, and then place it back on warrant. Those merry-go-round transactions lengthened the metal load out queue to exit the Metro warehouse system, blocked the exits for other metal owners seeking to leave the system, and helped ensure Metro maintained its aluminum stockpiles while earning a steady income. Metro's queue grew to an unprecedented length, forcing metal owners to wait, at times, up to nearly two years to get their metal out of storage in Detroit.

As the Detroit warehouse queue grew, so did the Midwest Aluminum Premium (Midwest Premium), a component of the aluminum price. Higher Midwest Premium prices increased aluminum costs for U.S. aluminum buyers and weakened their ability to hedge their price risks, affecting aluminum users in the defense, transportation, beverage, and construction sectors. Some industrial users of aluminum charged that the dysfunctional aluminum market inflated overall aluminum costs by $3 billion. While long queues and increasing Midwest Premium prices were hurting aluminum users, the LME has said that the emergence of increasing premiums "convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues."[1010]

Goldman, through its control of the Metro Board of Directors, approved Metro practices that lengthened Metro's queue, at the same time Goldman was ramping up its own aluminum trading operations. Between 2010 and 2013, Goldman built up its physical aluminum stockpile from less than $100 million in 2009, to more than $3 billion in aluminum in 2012. At one point in 2012, Goldman owned about 1.5 million metric tons of aluminum, worth $3.2 billion, more than 25% of annual North American aluminum consumption at the time. Goldman also engaged in massive aluminum transactions, acquiring hundreds of thousands of metric tons of metal in one series of transactions in 2012, and more than 1 million metric tons in another series of transactions later in the year. That same year, Goldman made large cancellations of warrants

[1010] 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 29, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

totaling about 300,000 metric tons of aluminum stored at Metro in Detroit, contributing to the lengthening of the queue.

The fact that Goldman engaged in extensive aluminum trading at the same time it was approving practices leading to a long warehouse queue has given rise to serious questions about the integrity of the aluminum market. Those doubts have been fueled, in part, by a perception that Goldman is benefiting financially from the longer queue and using non-public information gained through its ownership of Metro to benefit its trading activities. Metro and Goldman information barrier policies prohibit the sharing of confidential warehouse information with those engaged in aluminum trading.

(1) Background on Aluminum

Aluminum is one of the most actively traded base metals in the world, with complex physical and financial markets, and volatile prices that, at times, appear disconnected to fundamental forces of supply and demand.

Using Aluminum. Aluminum is a durable, versatile, light-weight base metal made by extracting aluminum oxide, commonly known as alumina, from bauxite ore. It is used in a wide variety of applications including in the transportation, construction, and consumer goods markets.[1011] General Motors Corp., for example, indicated that its 2012 U.S.-sold vehicles would contain an average of 370 pounds of aluminum, providing, among other applications, 90% of the engine block and all cylinder heads.[1012] Aluminum also plays an important role in the defense and aerospace industry and is a critical raw material for the production of military aircraft[1013] and ships.[1014] As of 2009, the most recent year for which figures were available, the U.S. Department of Defense consumed about 3% of annual U.S. aluminum production.[1015]

The United States is the world's fourth largest aluminum producer behind China, Russia, and Canada.[1016] In 2013, U.S. primary aluminum production (as opposed to production from

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[1011] See undated "Aluminum Consumption by Regions in 2013 and 2025" Rusal website, http://www.rusal.ru/en/aluminium/consumers.aspx; "Ford's Epic Gamble: The Inside Story," Fortune, Alex Taylor III (7/24/2014), http://fortune.com/2014/07/24/f-150-fords-epic-gamble/ (Ford's new all-aluminum truck).

[1012] U.S. Geological Survey 2011 Yearbook on Aluminum, http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/myb1-2011-alumi.pdf, citing "GM sees 2011 sales at 12–13 mil units," Platts Metals Week, v. 82, no. 38,(9/19/2011), at 15. See also "The Changing Demand for Aluminum in North America," Open Markets, a CME publication, Samantha Azzarello (3/18/2014), http://openmarkets.cmegroup.com/7855/the-changing-demand-for-aluminum-in-north-america (discussing rising aluminum demand in cars).

[1013] See, e.g., undated "Defense[:] Military Aircraft," Kaiser Aluminum website, http://www.kaiseraluminum.com/markets-we-serve/aerospace/defense/military-aircraft/.

[1014] One shipbuilding company, Austal USA, told the Subcommittee that it uses 2.5 million pounds of aluminum in each Joint High Speed Vessel it produces for the U.S. Navy and 3.5 million pounds in each Littoral Combat Ship. Subcommittee briefing by Austal USA. (10/30/2014).

[1015] See 12/2005 "China's Impact on Metals Prices in Defense Aerospace," prepared by U.S. Department of Defense, at 1-2, http://www.acq.osd.mil/mibp/docs/china_impact_metal_study_12-2005.pdf; 1/25/2014 email from Office of the Secretary of Defense to Senate Armed Services Committee staff, "Aluminum," PSI-OSD-01-000001.

[1016] 2/2014 "Aluminum Production," prepared by Mineral Resources Program, U.S. Geological Survey, http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/mcs-2014-alumi.pdf.

scrap aluminum) was more than 1.9 million metric tons.[1017] North American aluminum consumption is expected to be about 6.4 million metric tons in 2014.[1018]

Aluminum Infrastructure. A complex infrastructure is required to produce useable aluminum. Bauxite mines produce bauxite ore, which must be ground, mixed with chemicals, and subjected to heat and pressure to extract the alumina.[1019] The extracted alumina is then transformed into liquid aluminum through a smelting process.[1020] The liquid aluminum is mixed with other metals to form aluminum alloys which are molded or cast into ingots. Depending on the intended use, aluminum ingots can be fabricated into rolls or other shapes.[1021] Aluminum is non-toxic and can be stored for years without problems.[1022] Aluminum recycling provides another important source of the metal.[1023]

Aluminum Markets. Aluminum is bought and sold in both physical and financial markets. Physical aluminum is typically sold directly from producers to industrial end users. Most aluminum produced by smelters is sold directly to companies that use the metal to make their products. Physical aluminum can be sold through long or short term supply contracts or through ad hoc purchases made on "spot" markets. Physical aluminum prices are typically established, in part, by referencing aluminum prices in the financial markets.

In the financial markets, aluminum can be sold using a variety of financial instruments, including futures, options, swaps, and forwards. Those financial instruments can be bought or sold on public commodities exchanges, like the London Metal Exchange (LME) or the Chicago Mercantile Exchange (CME), or through over-the-counter (OTC) transactions. Published aluminum prices on the exchanges, most commonly the LME's "Official Price" for aluminum, play an important role as the reference price in contracts for physical aluminum.

Physical aluminum contracts typically establish the aluminum price using several pricing components which, when combined, produce an "all-in" aluminum price. One key component is the LME Official Price for aluminum as of a specific date or as an average over a specified period. That price is established through trading on the LME exchange and is generally recognized for aluminum as the "global reference for physical contracts."[1024] The second key pricing component is a regional "premium," which is intended to reflect the availability of

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[1017] A metric ton is equal to 1000 kilograms or about 2,200 pounds. See 9/10/2014 "U.S. Primary Aluminum Production," prepared by The Aluminum Association, http://www.aluminum.org/sites/default/files/USPrimaryProduction082014.pdf.

[1018] See undated "Capitalizing on Opportunities, Minimizing Risks," Alcoa website, http://www.alcoa.com/sustainability/en/info_page/vision_risks.asp.

[1019] See undated "Adding Value From the Ground Up," Alcoa website (interactive webpage teaching the stages of making aluminum). http://www.alcoa.com/global/en/about_alcoa/dirt/addingvalue_2.htm. See also undated "How it's Made," Hydro website, http://www.hydro.com/en/About-aluminium/How-its-made/ (webpage showing how aluminum is made from "bauxite, through production, use and recycling").

[1020] Id.

[1021] Id.

[1022] "Aluminum 101," The Aluminum Association website, http://www.aluminum.org/aluminum-advantage/aluminum-101.

[1023] Id.

[1024] Undated "LME Official Price," LME website, http://www.lme.com/pricing-and-data/pricing/official-price/.

aluminum in a particular geographic area and the cost of delivering aluminum there.[1025] The relevant premium for aluminum sold in the United States is the Midwest Aluminum Premium (Midwest Premium). Midwest Premium prices are published by a company called Platts, which derives it by conducting surveys of the contract prices between physical spot market aluminum buyers and sellers for delivery of the metal.[1026] Large aluminum users typically closely monitor the LME and Midwest Premium prices, since both prices will largely determine the all-in price they will pay for aluminum in contracts with aluminum producers.[1027]

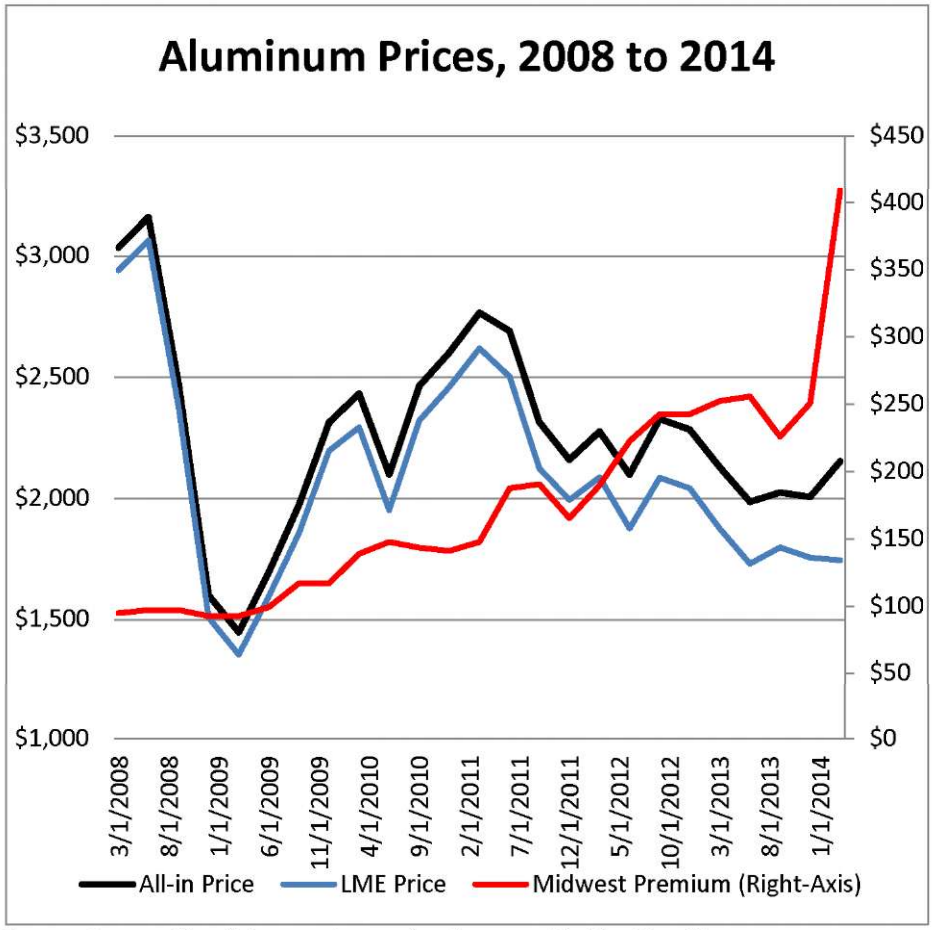
Aluminum Prices. Over the past five years, aluminum prices have been volatile, with all-in prices sometimes swinging by as much as $400 per metric ton within a month.[1028] The following graph depicts the aluminum all-in price, LME futures price, and Midwest Premium price from 2008 to 2014. The Midwest Premium price has climbed dramatically, both in dollar terms and as a percentage of the all-in price.

[1025] A third pricing component in physical aluminum contracts may be the cost of producing for delivery a particular shape or aluminum alloy. So-called "product premiums" are not a focus of the Subcommittee's Report. See 3/31/2014 Alcoa, Inc. Form 10-Q for the quarterly period ending March 31, 2014, at 45. http://www.sec.gov/Archives/edgar/data/4281/000119312514157120/d701633d10q.htm.

[1026] See 6/2014 "Methodology and Specifications Guide," prepared by Platts, at 2, https://www.platts.com/IM.Platts.Content/methodologyreferences/methodologyspecs/metals.pdf.

[1027] See, e.g., Subcommittee briefing by Austal USA (10/30/2014). Austal told the Subcommittee that it purchases millions of pounds of aluminum each year to build ships for the U.S. Department of Defense (DOD). Austal explained that, under its DOD contract, any increase in the purchase price of physical aluminum was shared 50% by the company and 50% by DOD, which meant that increased aluminum costs required additional U.S. taxpayer dollars. Austal indicated that it continually monitors both the LME and Midwest Premium prices.

[1028] Subcommittee briefing by Austal USA (10/30/2014).



Source: Prepared by Subcommittee using data provided by Novelis.
See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

For many years, the Midwest Premium was a relatively small portion of the all-in price for physical aluminum. In recent years, however, it has grown more volatile and has dramatically increased in both real dollar terms and as a proportion of the all-in price. That development has had an adverse impact on many industrial aluminum users who believe that higher Midwest Premium prices decrease their ability to hedge price swings and lead to higher all-in prices for aluminum.[1029]

Aluminum Trading on the London Metal Exchange. The London Metal Exchange (LME) is the dominant market in the world for trading aluminum, copper, and other base metals. The exchange is physically located in London and falls within the jurisdiction of the United Kingdom's Financial Conduct Authority (FCA). The LME is empowered by the FCA to act as the primary regulator for its market.[1030]

[1029] See, e.g., Subcommittee briefing by Novelis, (11/3/2014).
[1030] See undated "Regulation," LME website, http://www.lme.com/regulation/.

The LME is owned by London Metals Exchange, which is owned by LME Holdings Limited.[1031] For many years, the LME was a member-owned organization, and several large banks, including Goldman, JPMorgan, Barclays, Deutsche Bank, and Citigroup, held its shares.[1032] In late 2012, the LME shareholders sold 100% of their shares to Hong Kong Exchanges and Clearing Ltd., which is now the sole owner of the LME.[1033]

The LME offers many types of financial products for trading on the exchange, including:

- Futures – contracts that obligate parties to buy or sell a specified amount and type of metal at a specified price on a specified future date; and

- Options – similar to futures contracts except that parties have the option rather than an obligation to buy or sell the metal at the specified date and price.[1034]

Those financial products can be used to trade a variety of base metals on the LME, such as aluminum and copper.

Every day, the LME publishes official prices for each metal traded on the exchange. For aluminum, those include the "cash" price and a "three month" futures price. LME prices, especially the daily LME Official Price, have become benchmarks for aluminum physical contracts.[1035] Aluminum market participants also use LME futures to hedge their exposure to changes in aluminum prices,[1036] although, as shown in the chart above, over the last two years, there has been an increasing gap between the LME price and the all-in price consumers actually pay for aluminum. That growing difference between the LME price and the all-in aluminum price has made the LME price a less effective hedging tool.

LME Warrants. Parties trading LME futures contracts can generally settle those contracts in one of two ways. The first and most common method is called offsetting. Under that settlement method, a party's obligation to deliver or take delivery of metal under an LME futures contract can be negated by their entering into an equivalent but opposite transaction, such as buying a short to match a long position. This settlement method offers a purely financial option, since funds can be used to purchase the necessary offsetting positions.

[1031] See 12/6/2012 Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Ltd. press release, "HKEx and LME Announce Completion of Transaction," http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/.

[1032] Id.; "LME Shareholders OK HKEx Takeover Pact," Resource Investor, Philip Burgert (7/25/2012), http://www.resourceinvestor.com/2012/07/25/lme-shareholders-ok-hkex-takeover-pact.

[1033] See 12/6/2012 Hong Kong Exchanges and Clearing Limited (HKEx) and LME Holdings Ltd. press release, "HKEx and LME Announce Completion of Transaction," http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/.

[1034] See undated "Trading[:] Contract Types," LME website, https://www.lme.com/trading/contract-types/.

[1035] In many U.S. physical aluminum contracts, for example, the parties agree to deliver a specified amount of aluminum on a specified date at the then-prevailing LME Official Price, plus the Midwest Premium, plus other specified amounts such as a product premium or additional delivery charge.

[1036] While some aluminum users hedge their price risk using the LME futures market, several others told the Subcommittee that they typically do not hedge their positions on the LME itself, but instead engage in bilateral swap transactions with banks or other market participants to hedge aluminum prices. Even in those instances, however, the Subcommittee was told that the LME price is often the reference price in those swap agreements. See, e.g., Subcommittee briefing by Anheuser Busch (10/9/2014).

The other way to settle an LME contract is to deliver or take delivery of LME "warrants," documents that convey actual legal title to specific lots of metal stored in LME-approved warehouses.[1037] This settlement option results in ownership of physical metal. In order for physical metal to be used to settle an LME trade, it must be "warranted" by the LME as meeting certain quality and quantity requirements and being maintained in a warehouse approved by the LME. In the case of aluminum, the LME warrant conveys title to a specific lot of 25 metric tons of "high grade primary aluminum" stored in an LME-approved warehouse.[1038]

While physical settlement is relatively rare, the LME has emphasized its importance:

> "This presence, or threat, of delivery has the result of constantly ensuring that the LME price is in line with the physical market price. It also enables industry to sell material via the Exchange delivery system in times of over supply, and use the LME as a source of material in times of extreme shortage."[1039]

The LME warranting system has, for much of its history, enabled the LME to function as a market of last resort for market participants seeking to buy metal. Put simply, the owner of a future, through the warrant settlement system, could expect to receive title to metal on a specific date at a specific price. In addition, the LME explained, the ownership of warrants could be utilized as a "backstop" for negotiations in a financial transaction.[1040]

If an owner of metal under LME warrant decided to remove its aluminum from the LME warehouse, the owner would have to take steps to have its warrants "cancelled."[1041] To cancel the warrants, the owner must notify the warehouse holding the metal, and the warehouse must complete the necessary paperwork and notify the LME, which monitors the amounts of metal stored in each LME-approved warehouse. It is only after the warrants are cancelled, the owner of the metal has settled outstanding rent and other warehouse charges, and the owner has

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[1037] 11/2013 "Summary Public Report of the LME Warehousing Consultation." prepared by London Metal Exchange, at 7, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf (One LME aluminum warrant equals 25 metric tons of the metal).

[1038] See "Futures Contract Specifications[:] LME Aluminum Futures," LME website, http://www.lme.com/metals/non-ferrous/aluminium/contract-specifications/futures/ (reflecting a number of specifications regarding the appropriate volume and characteristics of the aluminum). The LME also has warrants for certain aluminum alloys that can be traded on the exchange; they convey title to a specific lot of 20 tons of A380.1, 226 or AD12.1 aluminum alloy. See "Futures Contract Specifications[:] LME Aluminum Alloy Futures," LME website. http://www.lme.com/metals/non-ferrous/aluminium-alloy/contract-specifications/futures/ .

[1039] See undated "FAQ: Why is the physical delivery important for minor metals futures?" LME website, http://www.lme.com/about-us/faqs/#.

[1040] See 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by London Metal Exchange, at 68, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

[1041] See In re Aluminum Warehousing Antitrust Litigation, Case No. 13-md-02481-KBF (USDC SD New York), Complaint (4/11/2014), at ¶ 147.

provided the warehouse with shipping instructions that the metal is placed in a queue for load-out from the LME warehouse.[1042]

For most of LME's history and at most warehouses, metal owners could load out metal stored in an LME warehouse within a few days or weeks. Over the past several years, however, long lines or "queues" to load out metal from some LME-approved warehouses have developed, in particular with respect to aluminum. In some cases, warrant owners have had to wait months, a year, or even longer to take possession of warranted aluminum. As discussed more fully below, in the United States, as the queue has grown, the difference between the LME official price and the all-in market price for physical aluminum has widened, reducing the effectiveness of the LME price as a hedge for aluminum prices.

LME Warehouses. While the LME does not own or operate the warehouses where aluminum and other exchange-traded metals are stored, it enters into a standard, non-negotiable Warehouse Agreement with the warehouse owners, allowing them to store LME-warranted metal in exchange for compliance with the terms and conditions of the Warehouse Agreement.[1043]

Currently, more than 700 LME-approved warehouses are in operation.[1044] LME-approved warehouses are located in many countries around the globe and store a vast volume of metals. For many years, LME warehouses were owned by independent warehousing companies that did not engage in commodities trading. Beginning in 2010, however, many of those warehouse companies were bought by bank holding companies or trading houses with extensive commodity trading operations.[1045]

Some of the key global networks of LME-approved warehouses are operated by Metro, which is owned by Goldman;[1046] Henry Bath & Sons, which was recently sold by JPMorgan to Mercuria Energy Trading;[1047] Pacorini Metals, which is owned by Glencore, a commodities trading house; NEMS Ltd. (recently renamed Impala Terminals) which was acquired by Trafigura, a commodities trading and logistics company; and C. Steinweg Handelsveem, an independent warehousing firm unaffiliated with a trading company.[1048]

[1042] See 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 008.

[1043] See In re Aluminum Warehousing Antitrust Litigation, Case No. 13-md-02481-KBF (USDC SD New York), Complaint (4/11/2014), at ¶ 156; Opinion and Order (8/25/2014) (ECF No. 564), at 9.

[1044] See undated "Approved Warehouses," LME website, https://www.lme.com/trading/warehousing-and-brands/warehousing/approved-warehouses/.

[1045] See, e.g., "Metals Warehousing: The Perfect Hedge & The Perfect Storm?," Hard Assets Investor, Tom Vulcan (3/23/2012), http://www.hardassetsinvestor.com/features/3567-metals-warehousing-the-perfect-hedge-a-the-perfect-storm.html.

[1046] See "Goldman and JPMorgan enter metal warehousing," Financial Times, Javier Blas (3/2/2010), http://www.ft.com/intl/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz3CkHqTn7n .

[1047] See 10/3/2014 Mercuria press release, "Mercuria Closes Acquisition of J.P. Morgan Chase Physical Commodities Business," http://www.mercuria.com/media-room/business-news/mercuria-closes-acquisition-jp-morgan-chase-physical-commodities-business.

[1048] See "Metals Warehousing: The Perfect Hedge & The Perfect Storm?," Hard Assets Investor, Tom Vulcan (3/23/2012), http://www.hardassetsinvestor.com/features/3567-metals-warehousing-the-perfect-hedge-a-the-perfect-storm.html.

Aluminum Trading on the CME. The CME Group Inc. owns four exchanges on which commodity-related financial products are traded, including futures, options, and swaps linked to aluminum.[1049] The CME Group is primarily regulated by the U.S. Commodity Futures Trading Commission (CFTC) and the U.S. Securities and Exchange Commission (SEC).

In 2012, the CME Group began offering a new financial product related to aluminum called the "Aluminum MW U.S. Transaction Premium Futures" contract. That futures contract was made available for trading on COMEX, one of the CME Group's commodity exchanges. It represented the first exchange-traded product allowing aluminum market participants to manage price risks associated with the Midwest Premium for aluminum.[1050] In May 2014, the CME Group launched a second new aluminum-related product for trading on COMEX, a futures contract for delivery of physical aluminum in North America. CME described the new contract, which is intended to be an all-in price, as designed to increase price transparency for aluminum and enable market participants to better manage price risks than is currently possible using LME futures.[1051] To date, however, both of the new CME aluminum products have been thinly traded.[1052]

Aluminum Trading in the Over-the-Counter (OTC) Market. Aluminum and aluminum-related derivatives are also traded over-the-counter (OTC), which means they are traded outside official exchanges like the LME and COMEX.

Aluminum-related swaps executed in the OTC market are often customized to address specific issues. They include, for example, swaps designed to permit aluminum market participants to hedge their price exposure to the all-in price of aluminum, the LME price, or the Midwest Premium, which has been steadily increasing in price and volatility over the last few years.[1053] The Subcommittee has been told that large financial institutions, including Goldman, and major aluminum consumers have traded those aluminum swaps in the OTC market.[1054]

Another type of aluminum trading that takes place in the OTC market, outside of the exchanges, involves trading LME warrants for aluminum lots held in different warehouse locations.[1055] That trading takes place because the value of aluminum is affected by where it is

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[1049] See undated "Driving Global Growth and Commerce." CME Group website. http://www.cmegroup.com/company/history/. The four exchanges are the Chicago Mercantile Exchange (CME), Chicago Board of Trade (CBOT), New York Mercantile Exchange (NYMEX), and the Commodity Exchange (COMEX) which is a division of the NYMEX.

[1050] See 8/9/2013 CME Group press release, "CME Group Announces the First Aluminum Midwest Premium Contracts Traded," http://investor.cmegroup.com/investor-relations/releasedetail.cfm?ReleaseID=784335. At the time of its introduction, the CME said it was offering the product, because "[i]n the past three years, the premium increased from $0.04/lb to close to $0.09/lb and it is now a larger component of the aluminum consumer's cost and risk. This contract enables market participants in North America to better manage their price risk." Undated "FAQ: Aluminum MW US Transaction Premium Platts (25MT) Swap Futures," CME Group website. http://www.cmegroup.com/trading/metals/files/faq_aluminum_mw_us_transaction_premium_swap.pdf.

[1051] See 3/18/2014 CME Group press release, "CME Group to Launch North American Physically Delivered Aluminum Futures," http://online.wsj.com/article/PR-CO-20140318-907146.html.

[1052] Subcommittee briefing by CFTC (9/2/2014).

[1053] See 9/17/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-15-000001, at 003.

[1054] See, e.g., Subcommittee briefing by Anheuser-Busch (10/9/2014).

[1055] Subcommittee briefing by London Metal Exchange (8/1/2014).

located and how long it may take to remove the aluminum from the warehouse. For example, warrants for aluminum held in a warehouse with a long queue may be worth less than warrants for aluminum held in a warehouse with no queue. Relative values of warrants for aluminum held in different locations may change by the day as warehouse queues lengthen or shorten.

Because OTC trades are not subject to the same reporting as those that occur on regulated exchanges, it is difficult to determine the overall size of the OTC aluminum market and the types of financial instruments that are most common.

Relationship Between Warehouse Queues and Aluminum Prices. A critical factor affecting aluminum trading in recent years has been an unprecedented growth in the size of physical aluminum inventories at LME-approved warehouses, as industrial demand for the metal plummeted during the financial crisis and metal owners sought to sell or store their excess stocks.[1056] The increase in aluminum inventory was particularly dramatic at Metro's Detroit warehouses. At the same time the physical aluminum inventories increased, warrant holders with metal in the Metro Detroit warehouses experienced increasingly long queues before they could remove their aluminum from the warehouses. Those queues, over time, have been highly correlated with the increases in the Midwest Premium prices.

At the end of February 2010, just after Goldman acquired Metro, the Midwest Premium was approximately $134 per metric ton.[1057] It has since steadily climbed to over $400.[1058] In dollar terms, the Midwest Premium climbed over 300% in just a few years. Over the same period, the queue went from about 40 days to over 600 days.[1059]

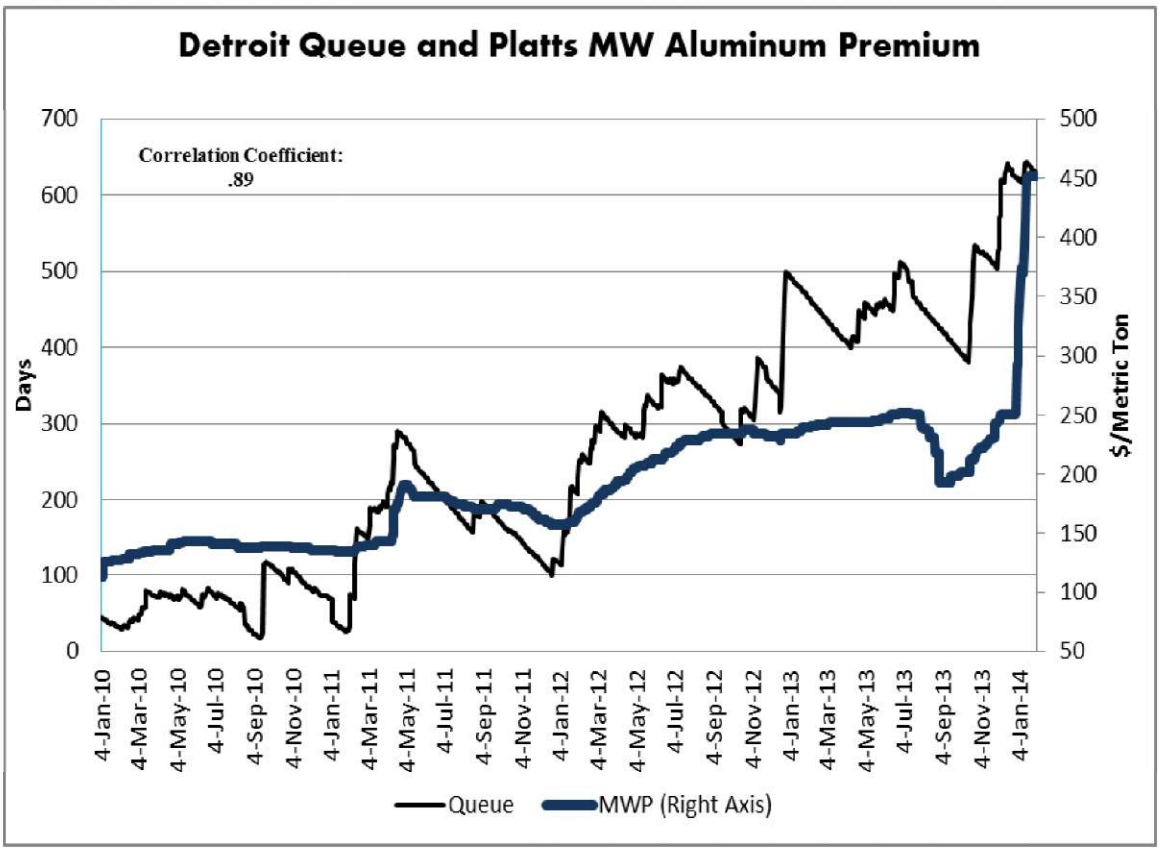
As depicted in the chart below, the increase in the Midwest Premium has been highly correlated with the growth of the queue at Metro's Detroit warehouses.

[1056] See 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 20, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

[1057] See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

[1058] Id.

[1059] See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.



Source: Prepared by the Subcommittee using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

Between 2010 and 2014, the changes in queue length at the Metro warehouses in Detroit and the changes in the Midwest Premium price had a correlation coefficient of approximately 0.89, an exceptionally high correlation.[1060]

Many market participants, including many large aluminum users, contend that the longer queues are pushing up the Midwest Premium, which is intended to reflect, in part, storage costs, and that the increased Midwest Premium prices result in higher all-in aluminum prices. The Aluminum Users Group, a coalition of large manufacturers including Novelis, Coca Cola, MillerCoors, and others, wrote to the LME that market "distortions" due to long queues had resulted in physical premiums that "are at least double their normal levels."[1061] In 2013, a MillerCoors representative testified before the U.S. Senate Banking Committee that the queues had cost his company "tens of millions of dollars in excess premiums over the last several years."[1062]

[1060] Subcommittee calculation using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.
[1061] 10/29/2012 letter from Aluminum Users Group to LME, PSI-AlumUsersGroup-01-000010-012.
[1062] "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer

Prominent aluminum analysts agree with that view. Jorge Vazquez of Harbor Aluminum Intelligence, a leading industry analyst, has said that the emergence of long queues led directly to higher premiums, commenting that warehouse practices were "being used as a platform to inorganically inflate aluminum premiums at the expense of the aluminum consumer and at the benefit of some warehouses, banks and trading companies."[1063]

In contrast, the LME and Goldman contend that longer queues have not affected the all-in price for aluminum. Although both the LME and Goldman concede that the queue has affected premium prices and the relative proportions of the all-in price attributable to the premium price versus the LME price, they assert that the effect of the longer queue has been to drive the LME portion down and the premium portion up, leaving the all-in price substantially unchanged.[1064] That analysis is a minority view, according to briefings provided to the Subcommittee by numerous aluminum market participants and experts. Alcoa, the largest U.S. aluminum producer, told the Subcommittee, for example, that the LME and premium prices are not inversely related, but move independently of one another.[1065] In a recent filing with the SEC, Alcoa wrote that the LME price and the aluminum premium each "has its own drivers of variability."[1066] Mr. Vazquez, the aluminum analyst, agreed with that view, indicating to the Subcommittee that "there has been no empirical study or evidence or modeling that suggests changes in LME prices and the Midwest Premium are inversely related," as the LME and Goldman have suggested.[1067] In fact, the LME and Midwest Premium prices can and often have moved in the same direction.

The Subcommittee's investigation found that, while there was disagreement about the impact of the queue on the level of the all-in aluminum price, there was broad consensus that the queue had affected Midwest Premium prices. The investigation also found that the price impacts of the queue had created problems for aluminum users like beverage can producers and automobile manufacturers who actually use aluminum, because the increasing difference between the all-in price and the LME futures price made hedging price risk through the LME market increasingly ineffective.[1068] A number of commercial users told the Subcommittee that the lack of effective hedges damages planning and impacts revenues.[1069]

Protection, S. Hrg. 113-67 (7/23/2013), testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9. http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm.

[1063] "Aluminum Premiums To Fall After LME Warehouse Plan?" Metal Miner. (11/8/2013), http://agmetalminer.com/2013/11/08/aluminum-premium-to-fall-after-lme-warehouse-plan/. ; Subcommittee briefing by Jorge Vazquez (9/30/2014).

[1064] See 10/31/2013 "The Economic Role of a Warehouse Exchange" prepared by Goldman Sachs Commodity Research (The development of the queues has not affected the total "physical" price for aluminum), GSPSICOMMODS00047511 - 545; 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 24. https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf ("[L]ong queues reduce the value of warrants, and . . . it was these lower-value warrants which were being used to settle LME contracts and set LME price.").

[1065] Subcommittee briefing by Alcoa (8/5/2014);

[1066] 3/31/2014 Alcoa, Inc. Form 10-Q for the quarterly period ending March 31, 2014, at 45, http://www.sec.gov/Archives/edgar/data/4281/000119312514157120/d701633d10q.htm.

[1067] Subcommittee briefing by Jorge Vazquez (9/30/2014).

[1068] This was, in fact, the explicit reasoning used by the CME when it introduced its Aluminum MW U.S. Transaction Premium contract in 2012. Undated, "FAQ: Aluminum MW US Transaction Premium Platts (25MT)

Historically, industrial users seeking to hedge their aluminum price risk over time used futures, forwards, or swap transactions linked to LME prices. Trading records show that, in the five years prior to Goldman's purchase of Metro, the LME price as a percentage of the all-in price for aluminum averaged over 95%, making LME futures a fairly effective hedge against all-in aluminum price increases.[1070] Since 2010, however, the portion of the all-in price attributable to the LME price has fallen steadily. For example, in January 2014, the LME price made up about 75% of the all-in price, eroding the value of LME futures as a hedge for aluminum's all-in price.[1071] At the same time, the Midwest Premium has grown in both in dollar terms and as a percentage of the all-in aluminum price. At the end of February, 2010, just after Goldman acquired Metro, the Midwest Premium was about $134, or about 6% of the all-in price. By the end of January 2014, the Midwest Premium was over $450, comprising about 22% of the all-in price.[1072]

Compounding the problem for aluminum users has been the difficulty in hedging the growing premium portion of the all-in aluminum price. While the CME Group now offers futures to manage price risks associated with the Midwest Premium, those new products are still thinly traded.[1073] The end result is that aluminum users have been less able to hedge their price risk and more susceptible to price changes due – not to market forces of supply and demand – but to increased Midwest Premium prices highly correlated with longer warehouse queues. According to industry aluminum users, those factors have cost manufacturers and consumers billions of dollars.[1074]

At the same time the increasing Midwest Premium prices have been causing problems for aluminum users, the LME has said that the emergence of increasing premiums "convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues."[1075] In other words, the increases in the Midwest Premium have benefited aluminum traders.

(2) Goldman Involvement with Aluminum

Over the last five years, Goldman has dramatically increased its physical aluminum activities. Beginning in 2010, it took control of a network of LME-approved warehouses, and helped the warehouses in Detroit accumulate the largest stockpile of LME warranted aluminum

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Swap Futures." CME Group website. http://www.cmegroup.com/trading/metals/files/faq_aluminum_mw_us_transaction_premium_swap.pdf.

[1069] For example, one manufacturer who uses aluminum to build warships told the Subcommittee that its inability to effectively hedge the all-in price has resulted in its taking costly measures, including buying substantial amounts of physical aluminum to hold it for future use. Subcommittee briefing by Austal (10/30/2014).

[1070] See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

[1071] Id.

[1072] Id.

[1073] Subcommittee briefing by CFTC staff (9/2/2014) .

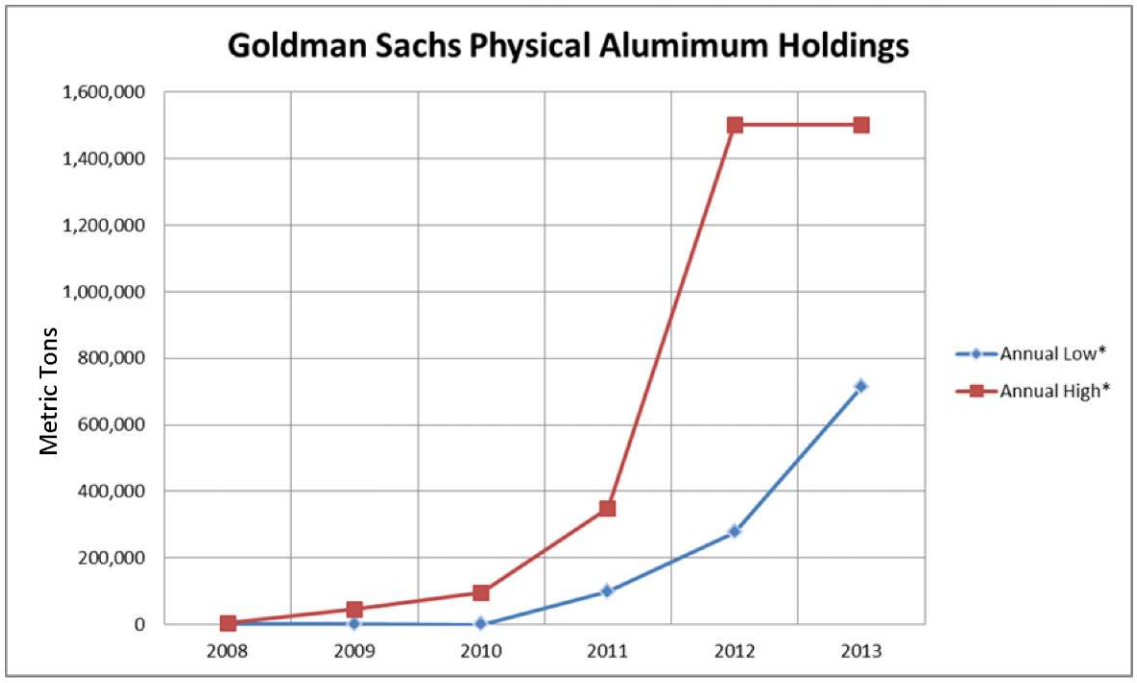
[1074] See, e.g., "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9, http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm .

[1075] 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 29, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

in the United States. It also dramatically increased its own physical inventory, building its physical aluminum holdings from less than $100 million in 2009 to more than $3 billion at one point in 2012. In addition, from 2009 until late 2012, Goldman had a significant ownership stake in the LME itself, the primary exchange for trading aluminum. In short, Goldman owned aluminum, traded in aluminum-related financial products, owned part of the exchange where those products were traded, owned warehouses where aluminum was stored, and its warehouse sat on the committee advising on the rules for how warehouses should operate. Those activities made Goldman an increasingly influential participant in the aluminum markets.

(a) Building An Aluminum Inventory

Prior to 2010, Goldman's physical aluminum activities appear to have been relatively small. From 2008 to 2009, Goldman's aluminum holdings fluctuated between about 1,600 and 44,000 metric tons, representing between $2 million and just under $100 million in assets.[1076] At the time Goldman acquired Metro in February 2010, Goldman actually owned no physical aluminum at all.[1077] As shown in the graph below, however, Goldman's aluminum inventory then began to skyrocket.



*Totals for 2012 and 2013 reflect Goldman Sachs aluminum holdings at the close of highest and lowest months during those years. Physical holdings may have exceeded or been lower than month-ending figures.
Source: See 2/20/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-Goldman-02-000001, attaching Goldman chart, GSPSICOMMODS00000001-R, at 2-R; 4/30/2014 letter from Goldman letter to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001, Exhibit D, at 013.

[1076] See 2/20/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-Goldman-02-000001, attaching Goldman chart, GSPSICOMMODS00000001-R – 003-R, at 002-R.
[1077] Id. at GSPSICOMMODS00000001-R, at 2-R.

By the end of 2010, less than a year after purchasing Metro, Goldman's physical aluminum holdings grew to approximately 95,000 metric tons worth about $240 million. By the fall of 2011, Goldman had nearly 350,000 metric tons worth more than $860 million.[1078] The trend continued in 2012; by year's end, Goldman's aluminum holdings exceeded 1.5 million metric tons worth more than $3.2 billion dollars.[1079] In early 2013, the company sold about half of its aluminum.[1080] In September 2013, Goldman's aluminum holdings totaled about 714,000 metric tons, with a market value of about $1.3 billion.[1081]

One reason for the dramatic increase in Goldman's physical aluminum trading was its decision to expand its aluminum trading desk. In an interview, Christopher Wibbelman, Chief Executive Officer (CEO) of Metro, explained that around the time Goldman purchased the warehouse business, he was asked by Goldman to recommend some physical aluminum experts with whom Goldman's trading desk could discuss the aluminum market.[1082] He indicated that, shortly thereafter, Goldman hired two aluminum traders he had recommended.[1083] Goldman's physical aluminum trading soon after began to increase and its inventory to grow.

In addition to its rapidly expanding aluminum trading operations, between mid-2009 and the end of 2012, Goldman more than quadrupled its stake in the London Metal Exchange.[1084] By 2012, Goldman was second only to JP Morgan as the exchange's largest shareholder.[1085]

(b) Acquiring a Warehousing Business

Goldman also deepened its involvement with aluminum by purchasing Metro International Trade Services LLC (Metro), the owner of a global network of LME-approved warehouses that stored a variety of metals, including aluminum.[1086] Under Goldman's ownership, Metro implemented unprecedented practices to aggressively attract and retain aluminum in its Detroit warehouses. Over the next few years, Metro's Detroit warehouses accumulated the largest stockpile of LME warranted aluminum in the United States.

According to Goldman, in 2009, it was approached by representatives of Metro about buying the company.[1087] In February 2010, Goldman acquired Metro for about $450 million.[1088]

[1078] Id.
[1079] 4/30/2014 letter from Goldman letter to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, at Exhibit D, GSPSICOMMODS00004116.
[1080] Id.
[1081] Id.
[1082] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1083] Id.
[1084] See 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 003 - 004.
[1085] See, e.g., "London Metal Exchange shareholders vote on takeover," Reuters (7/24/2012), http://articles.chicagotribune.com/2012-07-24/news/sns-rt-lmevotel6c8ioig6-20120724_1_hkex-lme-board-shareholders ("The LME's top shareholder is JPMorgan, with 1.4 million shares, followed by Goldman with 1.23 million.").
[1086] See 9/12/2013 letter from Goldman legal counsel to Subcommittee, "January 11, 2013 Questionnaire," PSI-GoldmanSachs-06-000001 - 021, at 017 (Exhibit C); "Goldman and JPMorgan Enter Metal Warehousing," Financial Times, Javier Blas (3/2/2010), http://www.ft.com/cms/s/0/5025f82a-262c-11df-aff3-00144feabdc0.html#axzz2kXv0R8iX. Metro is a Delaware corporation.
[1087] Subcommittee briefing by Goldman (7/16/2014).

Goldman's purchase of Metro was the first of a series of warehouse acquisitions by financial firms that were also involved in trading metals.[1089]

Goldman's Global Commodities Principal Investing (GCPI) group conducted the analysis and took the lead in the Metro acquisition.[1090] Jacques Gabillon, a Goldman executive based in London, led the GCPI effort and later became Chairman of Metro's Board of Directors.[1091]

Goldman has said publicly that it does not consider Metro a "strategic business" for the financial holding company.[1092] Goldman told the Subcommittee that its decision to buy Metro was instead driven by: (1) the warehouse company's potential to generate rental income arising from storage of a glut of metal in the market (due to reduced demand from the financial crisis and recession); and (2) the potential for the warehouse company's rental income to act as a counter-cyclical source of income compared to Goldman's trading revenues.[1093] In 2011, Goldman projected internally that, by April 2013, the Metro investment would have "returned more than the full invested capital and continue to pay out substantial annual dividends."[1094]

At the time of the acquisition in 2010, Goldman stated publicly that Metro would "continue to operate independently," and the company's top management remained largely in place.[1095] Metro's senior executives at the time of acquisition, including Christopher Wibbelman, Mark Askew, and Michael Whelan, had each been with the company for more than a decade, and were seasoned leaders intimately familiar with the warehousing business.[1096]

[1088] 8/3/2011 "Presentation to Firmwide Client and Business Standards Committee," prepared by Goldman, FRB-PSI-707486-500. at 493. Compare Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2010. at Exhibit 21.1 (including "Metro International Trade Services LLC" as a subsidiary of GS Power Holdings LLC), with Goldman Sachs Group, Form 10-K for the fiscal year ending December 31, 2009, at Exhibit 21.1 (not listing GS Power Holdings LLC or Metro International as significant subsidiaries).

[1089] A few months later, JPMorgan acquired Henry Bath & Sons which, like Metro, owned a global network of warehouses storing aluminum and other metals traded on the LME. See, e.g., "Goldman and JPMorgan enter metal warehousing." Financial Times, Javier Blas (3/2/ 2010), http://www.ft.com/intl/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz3CkHqTn7n. In March 2010, Trafigura, a commodities trading and logistics company, purchased NEMS Ltd. another LME-approved warehousing company. See 3/10/2010 Trafigura press release, "Trafigura Beheer B.V. has acquired metal warehousing company NEMS Ltd.," http://www.trafigura.com/media-centre/latest-news/18580/#.U7rxFvldVu0. In September 2010, Glencore International, a commodities trading company, purchased the Pacorini Group's LME-warehousing assets. See "Glencore completes deal for Pacorini Metal," Reuters, Michael Taylor (9/14/2010), http://www.reuters.com/article/2010/09/14/pacorini-metals-idUSLDE68D0RR20100914. The Pacorini warehouse in Vlissingen is the only other warehouse in the world with lengthy aluminum queues.

[1090] Subcommittee interview of Jacques Gabillon (10/14/2014).

[1091] Id.

[1092] 7/31/2013 "LME Warehousing and Aluminum," Goldman Sachs website, http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html.

[1093] Subcommittee briefing by Goldman (7/16/2014); Subcommittee interview of Gregory Agran (10/10/2014).

[1094] 8/3/2011 "Presentation to Firmwide Client and Business Standards Committee," prepared by Goldman, FRB-PSI-707486 - 500, at 493.

[1095] See "Goldman and JPMorgan enter metal warehousing," Financial Times, Javier Blas (3/2/2010), http://www.ft.com/intl/cms/s/0/5025f82a-262e-11df-aff3-00144feabdc0.html#axzz3CkHqTn7n.; "Wall Street, Fed Face off Over Physical Commodities," Reuters, David Sheppard, Jonathan Leff, and Josephine Mason (3/2/2012), http://www.reuters.com/article/2012/03/02/us-fed-banks-commodities-idUSTRE8211CC2012030.

[1096] Subcommittee interview of Christopher Wibbelman (10/6/2014).

At the same time, however, Goldman installed a new Board of Directors at Metro that consisted exclusively of Goldman employees, including several executives in the company's Global Commodities group.[1097] The following chart identifies the Goldman employees who served on the Metro Board at some point during the last five years:

Goldman Employees Who Served as Metro Board Members 2009 to 2014

Goldman Employee	Goldman Department	From Date	To Date
Agran, Gregory	Global Commodities	2/1/2010	12/1/2011
Attwood Scott, Victoria*	Securities Div Compliance	2/1/2010	11/16/2012
Bulk, Maxwell*	Global Deriv Ops Mgmt	2/1/2010	7/1/2014
Gabillon, Jacques	GCPI head	2/1/2010	CURRENT
Haynes, Oliver*	Securities Div Compliance	10/30/2012	4/1/2014
Holzer, Philip	EQ PIPG Sales	2/15/2010	3/1/2014
Murphy, Ken	Archon**	3/1/2010	5/1/2011
Mancini,Robert*	Assetco***	2/1//2010	12/1/2012
McDonogh, Dermot	Controllers' Admin	3/1/2010	CURRENT
Siewert, Richard	Media Relations	10/1/2012	CURRENT
Weiss, Michael	Securities Div Compliance	1/23/2013	CURRENT
West, Owen	Natural Gas Trading	11/28/2011	CURRENT

*Former Goldman employee
**Archon refers to Archon LP, which is the predecessor to Goldman Sachs Realty Management LP.
***Assetco likely refers to GCPI, which stands for Global Commodities Principal Investments group.
Source: 8/15/2014 letter from Goldman Sachs legal counsel to Subcommittee, PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225; 11/11/2014 Briefing by Goldman legal counsel to Subcommittee (describing Archon and Assetco).

In its documentation, Goldman indicated that it relied on the Gramm-Leach-Bliley merchant banking authority to purchase the Metro warehousing business.[1098] That authority requires a financial holding company making a merchant banking investment to refrain from becoming involved in the routine management of the portfolio company and that it sell the company within ten years of acquisition.[1099] Despite Goldman's assertions that it was "not involved in the day-to-day management of the company,"[1100] after the acquisition, many business decisions by Metro required review and approval by Metro's Board of Directors or a Board subcommittee, both of which were comprised entirely of Goldman employees.[1101]

[1097] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225.
[1098] See 7/25/2012 Goldman "Presentation to Firmwide Client and Business Standards Committee: Global Commodities," FRB-PSI-200984 - 1043, at 1000.
[1099] See discussions of the Gramm-Leach-Bliley merchant banking authority in Chapter 2 and 3, above.
[1100] 7/31/2013 "LME Warehousing and Aluminum," Goldman Sachs website, http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html.
[1101] Subcommittee interview of Christopher Wibbelman (10/6/2014). Approval was required, for example, for each of the six merry-go-round deals described below.

Goldman has stated that "under the rules governing its purchase, we have to sell it within ten years from the date we bought it."[1102] Because Goldman characterized the Metro acquisition as a merchant banking investment, it did not notify or obtain prior permission from the Federal Reserve.

(c) Paying Incentives to Attract Outside Aluminum

Soon after its acquisition by Goldman, Metro significantly increased its spending on "freight incentives" to entice aluminum owners to move metal into its Detroit warehouses. Those financial incentives led to Metro's loading aluminum into its Detroit warehouses at an historic rate, resulting in Metro's expanding its Detroit operations, building the largest aluminum stockpile in the United States, and constructing a near monopoly of the U.S. LME aluminum storage market. The unprecedented warehouse queues that were developed at Metro's Detroit warehouses forced metal owners to wait months, a year, or at one point nearly two years to get their metal out of storage.

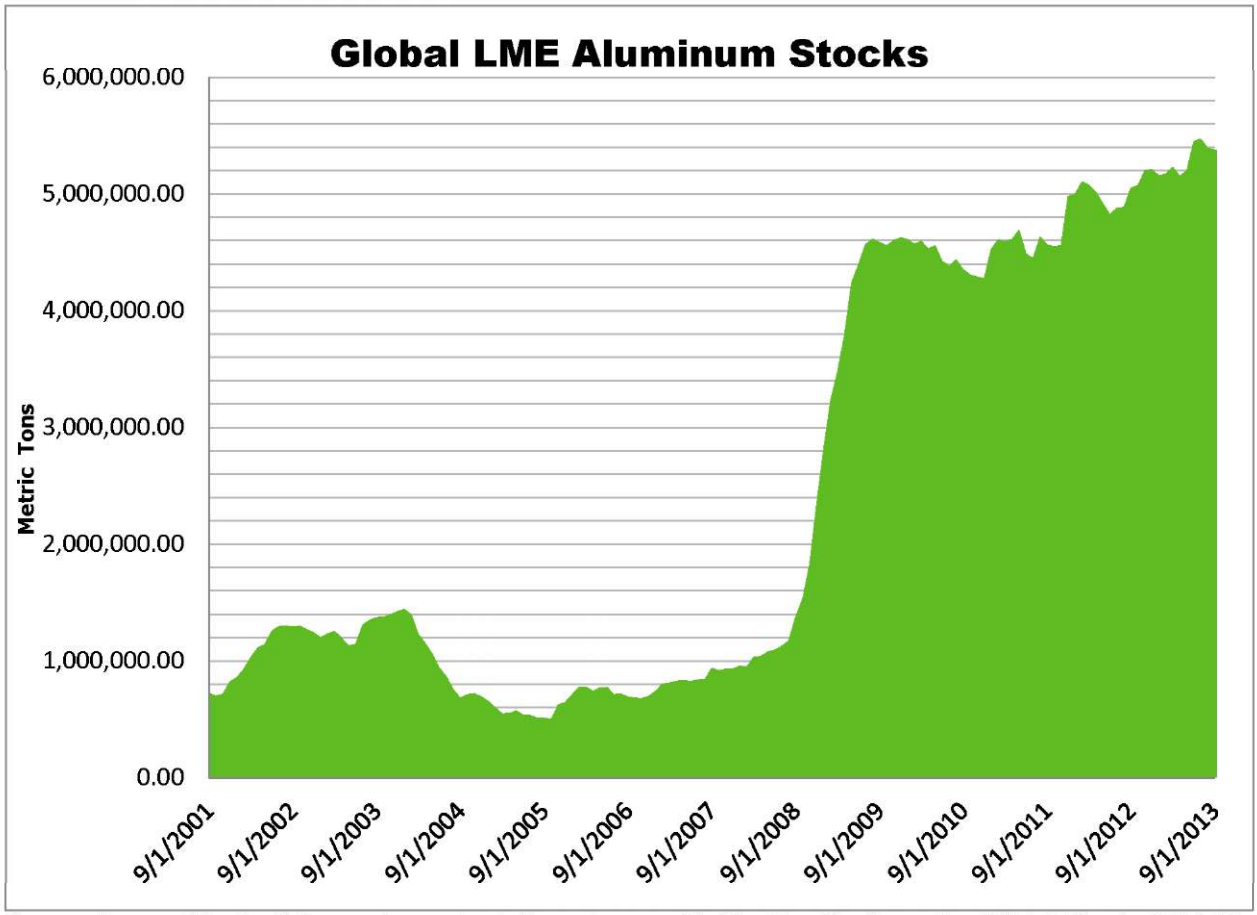
Storing an Aluminum Glut. Beginning in 2008, the financial crisis led to an unprecedented increase in the aluminum inventories at LME-approved warehouses, as industrial demand for the metal plummeted and metal owners sought to sell or store their excess stocks.[1103] As reflected in the graph below, between the end of January 2008 and the end of February 2010, global stocks of LME-warranted aluminum more than quadrupled, from less than 1 million to more than 4.5 million metric tons.[1104] Inventories of LME-warranted aluminum in the United States alone saw a similar dramatic increase, from less than 400,000 to nearly 2.1 million metric tons over the same period.[1105]

[1102] 7/31/2013 "LME Warehousing and Aluminum," Goldman Sachs website, http://www.goldmansachs.com/media-relations/in-the-news/archive/goldman-sachs-physical-commodities-7-31-13.html.

[1103] See, e.g., 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 20, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

[1104] See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

[1105] Id.



Source: Prepared by the Subcommittee using information provided by Novelis. See undated "LME Stocks 2014-05-06," prepared by Novelis, PSI-Novelis-01-000001.

Metro was a prime beneficiary of the increasing aluminum stockpiles. Whereas in January 2008, less than 400,000 metric tons of LME warranted aluminum were in storage in the entire United States,[1106] by the end of February 2010, Metro's Detroit warehouses alone were storing about 915,000 metric tons.[1107] Over the next two years, Metro's Detroit aluminum stocks continued to grow, reaching about 1 million metric tons in January 2011, and about 1.4 million metric tons by February 2012.[1108] A year later in 2013, they remained at nearly 1.4 million metric tons[1109] and, by February 2014, Metro's Detroit aluminum stocks stayed steady about 1.5 million metric tons, nearly all of which was on LME warrant.[1110]

[1106] Id.
[1107] See 3/11/2010 "MITSI Holdings LLC[:] Board of Directors Meeting," prepared by Metro and Goldman (hereinafter "3/2010 MITSI Board Meeting"), GSPSICOMMODS00009519 - 542, at 534.
[1108] See 2/15/2011 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009492 - 505, at 500 (hereinafter "2/2011 MITSI Board Meeting"); 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449, at 429.
[1109] See 3/26/2013 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009355 - 377, at 360, 363.
[1110] See 3/24/2014"MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273, 276.

Its increased aluminum inventories were accompanied by significant gains in Metro's share of the U.S. LME aluminum storage market. According to internal materials provided to Metro's Board of Directors, in early 2012, Metro's share of the U.S. LME aluminum storage market stood at 70%.[1111] By February 2013, it topped 78%.[1112] A year later, in 2014, the company's share of the U.S. LME aluminum storage market exceeded 85%.[1113]

To accommodate the increased aluminum inflows, Metro expanded its operations in Detroit, tripling the number of its warehouses from about 9 or 10 in 2010, to nearly 30 in 2014.[1114]

Paying Freight Incentives. Metro's near-monopoly of the U.S. LME aluminum storage market was built on the aluminum stored in its Detroit warehouses. In January 2008, only 52,000 metric tons of LME-warranted aluminum was stored in LME-approved warehouses in Detroit; by February 2014 Metro's Detroit warehouses had more than 1.5 million metric tons,[1115] an astounding increase. According to the LME, "revenues generated by large stocks allowed warehouses to offer incentives to attract more metal and this exacerbated the problem."[1116] In other words, the more metal Metro had, the more rent it received, and the more incentives it could afford to pay.

Metro's increasing budget allocation for aluminum freight incentives supports that analysis. In early 2010, just after Goldman acquired the company, Metro paid nearly $37 million in freight incentives to attract aluminum to its warehouses.[1117] That figure doubled in one year to nearly $79 million in 2011, grew to nearly $103 million in 2012, and reached nearly $129 million in 2013, an increase of nearly 350% over four years.[1118]

The rapid increase in freight payments took place with the knowledge and approval of the Goldman employees sitting on Metro's Board of Directors. The freight incentive payment amounts were a regular part of the business review conducted by the Metro Board, using figures supplied by Metro management. In fact, in the very first Board meeting conducted after Goldman's acquisition of Metro, the new Board of Directors, comprised of exclusively Goldman

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[1111] 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449, at 431.
[1112] 3/26/2013 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009355 - 377, at 360, 363.
[1113] 3/24/2014 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273, 276.
[1114] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1115] See undated Novelis internal data, prepared by Novelis, PSI-Novelis-01-000001; 3/24/2014 MITSI Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009268 - 286, at 273.
[1116] 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 24, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.
[1117] See 9/17/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-15-000001 - 015, at 006 (Exhibit A).
[1118] Id.

employees, discussed freight incentives as a factor that would affect the company's monthly cash requirements.[1119]

The growth in incentive payments was controversial, since it resulted in Metro's affecting the flow of physical aluminum in the U.S. marketplace.[1120] In October 2012, a coalition of large aluminum users wrote to the LME complaining about "distortions" in the aluminum market, including warehouse incentives that "lure[d] metal away from the physical market" and contributed to increases in the Midwest Premium.[1121] Jorge Vazquez, a leading aluminum analyst, told the Subcommittee that while warehouse incentives have long been part of the aluminum market, it was a completely new phenomenon to have a warehouse company, in this case Metro, capture a critical mass of aluminum, use rent revenues from that critical mass to increase its incentive payments, and outbid others in the market for aluminum.[1122]

Warning Against Exceptional Inducements. The LME warehousing agreement, which sets the rules by which LME warehouses operate, warns against "artificially" affecting the metals markets by "Warehouses giving exceptional inducements":

> "[T]the proper functioning of the market through the liquidity and elasticity of stocks of metal under Warrant should not be artificially or otherwise constrained by Warehouses giving exceptional inducements or imposing unreasonable charges for depositing or withdrawing metals, nor by Warehouses delaying unreasonably the receipt or dispatch of metal, save where unavoidable due to force majeure."[1123]

The LME's warehousing agreement has long provided the LME with authority to investigate all charges levied. Since April 2014, it has also had the right to compel warehouse companies to provide information about their activities, "including, without limitation, details of all inducements paid to attract the load-in of metal and details of the provenance of loaded-in metal, including information about metal which may have been previously in that Warehouse, or in another facility operated by the same Warehouse or member of the Warehouse's group."[1124] In addition, under the agreement, the LME can "impose additional load-out requirements on a Warehouse which the Exchange considers to have intentionally created or caused, or attempted to create or cause, a queue by the use of inducements or any other method."[1125]

[1119] See 3/2010 MITSI Board Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009519 - 542, at 530.

[1120] Warehouses offering incentives directly compete against buyers offering more than the LME price to aluminum sellers. As the LME put it, "[t]he warehouse incentive often underpins the willingness of merchants to bid a premium for producers' excess metal." 11/2013 "Summary Public Report of the LME Warehousing Consultation." prepared by LME, at 27. https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf

[1121] See 10/29/2012 letter from Aluminum Users Group to the London Metal Exchange, PSI-AlumUsersGroup-01-000010.

[1122] Subcommittee interview of Jorge Vazquez (9/30/2014).

[1123] 4/1/2014 "Terms and conditions applicable to all LME listed warehouse companies," prepared by LME, at Clause 9.3.1, LME_PSI0001406 - 427.

[1124] Id. at Clause 9.3.3 - 9.3.4.

[1125] Id.

The LME's authority to investigate and impose additional load-out requirements on warehouses that intentionally create queues is designed to detect and prevent unfair warehouse practices.[1126] In 2013, the LME stated in a report that warehouse inducements were "possibly[] relatively commonplace," but it had "not historically had cause to investigate" them.[1127] In December 2013, however, as discussed in more detail below, the LME opened an investigation into the inducements paid by Metro related to aluminum.[1128] The investigation included examining the freight incentives Metro paid to attract metal owners whose aluminum was already stored within its Detroit warehouses.[1129]

(d) Paying Incentives to Retain Existing Aluminum

Under Goldman's ownership, Metro's efforts to build aluminum stocks in its Detroit warehouses using incentives were not limited to offering freight incentives to attract so-called "free metal" from outside its warehouses. Metro also offered millions of dollars in incentives to a few large metal owners whose aluminum was already stored inside the Metro warehouse system. Most of those transactions involved Metro paying millions of dollars in incentives for a financial firm to cancel its warrants on metal held in Metro warehouses; join the queue to exit the Metro warehouse system; upon reaching the head of the queue, load out the metal from one Metro warehouse and re-load it into another Metro warehouse nearby; and later re-warrant the aluminum. Those "merry-go-round" deals resulted, not only in Metro's retaining the metal inside its system, but also in lengthening its load-out queue and essentially blocking other metal owners from exiting Metro warehouses. When asked to identify all of these types of deals, Goldman identified six involving over 600,000 metric tons of aluminum.[1130]

Metro also saw four large proprietary aluminum cancellations involving about 500,000 metric tons of aluminum held by Goldman or JPMorgan whose warrant cancellations further lengthened the Detroit warehouse queue. In addition, Metro disclosed 13 transactions in which it

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[1126] The LME's powers to investigate and take enforcement actions related to inducements may be limited. However, the LME has introduced amendments to its warehousing agreement that may enhance its powers, including by providing the LME with the power to compel warehouses to provide details of the inducements they pay, and the LME may impose additional load-out requirements on warehouses that it determines have intentionally created or caused or attempted to create or cause, a queue by the use of inducements or any other method. 11/7/2014, "Consultation on Changes to the Warehouse Agreement," prepared by LME, https://www.lme.com/~/media/files/notices/2014/2014_11/14%20319%20w149%20consultation%20on%20changes%20to%20the%20warehouse%20agreement.pdf.

[1127] 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 55, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf. See In re Aluminum Warehousing Antitrust Litigation, Case No. 13-md-02481-KBF (USDC SD New York), Declaration of Mark Bradley in Support of the London Metal Exchange's Motion to Dismiss All Complaints (5/23/2014), LME_PSI0000696 - 722, at 700 (representatives of both Metro and Pacorini, the companies that own warehouses with significant queues, sit on the LME's Warehousing Committee).

[1128] 12/4/2013 letter from LME to Metro, GSPSICOMMODS00046656 [sealed exhibit].

[1129] 12/6/2013 letter from LME to Metro, GSPSICOMMODS00046658 [sealed exhibit]; 3/10/2014 letter from LME to Metro, GSPSICOMMODS00046827 [sealed exhibit].

[1130] Subcommittee interview of Jacques Gabillon, (10/14/2014); 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004. As discussed below, one of the six deals involved warrants that had already been cancelled and were already in the queue to exit the warehouse. In that deal, Metro paid incentives for the owner to stay in the queue, load out its metal from one Metro warehouse into another, and place the metal on warrant.

received "break fees" from metal owners who withdrew aluminum from its U.S. warehouses earlier than planned and where the amount of those fees was linked to the Midwest Premium price. By obtaining fees linked to a rising Midwest Premium, Metro could potentially benefit financially in still another way from maintaining a long queue.

Lengthening the Queue and Blocking the Exits. Warehouse income depends upon the rent and other fees paid by metal owners storing metal. Warehouses that pay freight incentives to attract aluminum can offset that cost through higher rents, longer rental periods, or additional fees. A warehouse queue, which requires metal owners to wait in line – paying rent until they exit – offers one way to boost rental income. If the metal owner at the head of the queue has a large amount of metal, it may take weeks or months to load it out, essentially blocking the exits for other metal owners still waiting in line and paying rent.

A queue forms when metal owners cancel their warrants and seek to load out their metal from a warehouse at a rate that exceeds the LME's daily warehouse load-out requirement. The LME specifies the minimum amount of metal that a warehouse must load-out each day. Between 2003 and 2011, the LME's minimum load-out rate was 1,500 metric tons per day for the largest LME warehouses, such as Metro's Detroit warehouses.[1131] In April 2012, the LME increased that number to a rate ranging from 1,500 to 3,000 metric tons a day, depending upon a warehouse's closing stock level.[1132] In November 2013, the LME adopted a rule that would have linked a warehouse's load-in rate to its load-out rate as of April 2014, but the rule was subjected to a court challenge.[1133] Metro nevertheless began voluntarily complying with the new rule in April.[1134] After the court challenge failed, the LME announced on October 27, 2014, that it would proceed with the rule.[1135] The new rule provides that, as of February 2015, a warehouse which has a queue over 50 days and which continues to load in metal, will be subject to additional load-out requirements aimed at reducing the queue and preventing new queues from forming in the future.[1136]

Together, the LME's rules create a minimum daily load-out rate for LME-approved warehouses; they do not place any cap on the amount of metal that may be loaded out each day. A warehouse may always load out more than the specified minimum. According to Goldman, however, while the LME sets a minimum rather than maximum daily rate, "it is well understood by market participants that LME warehouses have an incentive to maximize inventory and rent

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[1131] See In re Aluminum Warehousing Antitrust Litigation, Case No. 13-md-02481-KBF (USDC SD New York), Opinion and Order (4/11/2014), at LME_PSI0001137 - 167, at 149; Undated "Europe-Economics Analysis Conducted for the LME," Executive Summary, at 1, LME website, https://www.lme.com/~/media/Files/Warehousing/Studies/Warehouse%20minimum%20loading%20out%20rates/Europe%20Economics-Summary.pdf.

[1132] See 11/17/2011, "Changes to LME Policy for Approval of Warehouses in Relation to Loading Out Rates – Result of Consultation With Warehouse Companies," prepared by LME, LME_PSI0001085 - 089.

[1133] 11/10/2014 email from LME to Subcommittee, PSI-LME-06-000001 - 003, at 002.

[1134] Id.

[1135] Id.

[1136] LME Policy Regarding the Approval of Warehouses, Revised 1 February 2015, LME, LME_PSI0002257 - 278. The new rule does not address the issue of whether numerous warehouses may share a single load-out queue, nor does it make any determinations on the appropriateness of the incentives and penalties that contributed to the queue at Metro.

and are likely to deliver metal at the minimum load-out rate."[1137] Despite the emergence of long queues under Goldman's ownership, Metro has largely continued the practice of loading out aluminum at, and not above, the LME's minimum daily rate.[1138]

In addition, the LME does not require Metro to apply the minimum load-out rate to each one of its warehouses, but rather allows Metro to apply the load-out rate on a collective basis, to all of Metro's warehouses in the Detroit area as a whole. As a result, Metro has combined all of its Detroit warehouses into a single warehouse system for purposes of the LME minimum load-out rate, created a single exit queue for the entire system, and generally allowed metal to exit the system at, but not above, the LME minimum daily rate.[1139] Metal owners who get to the head of the Metro Detroit queue typically use all of the available exit "slots" to load out their metal, so that no one else can load out metal at the same time.

Goldman and Metro's use of the LME load-out rate as a maximum rather than minimum load-out rate has been targeted as an abusive practice in over a dozen class action suits.[1140] At a 2013 Senate hearing, one commercial aluminum user had this to say:

> "[W]hat's happening is that the aluminum we are purchasing is being held up in warehouses controlled and owned by U.S. bank holding companies, who are members of the LME, and set the rules for their own warehouses. These bank holding companies are slowing the load-out of physical aluminum from these warehouses to ensure that they receive increased rent for an extended period time. Aluminum users like MillerCoors are being forced to wait in some cases over 18 months to take physical delivery due to the LME warehouse practices or pay the high physical premium to get aluminum today. This does not happen with any of the other commodities we purchase. When we buy barley we receive prompt delivery, the same with corn, natural gas and other commodities. It is only with aluminum purchased through the LME that our property is held for an extraordinary period of time, with the penalty of paying additional rent and premiums to the warehouse owners, until we get access to the metal we have purchased."[1141]

The LME told the Subcommittee that it did not maintain records of queues before 2010, but the view of its personnel was that any queues that may have existed prior to that year were

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[1137] See 8/6/2013 "Federal Reserve Bank of New York Reputational Risk Questions MITSI Holdings LLC," prepared by Goldman. FRB-PSI-700124 - 150, at 129.

[1138] See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?," hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC. at 3 - 4. http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm.

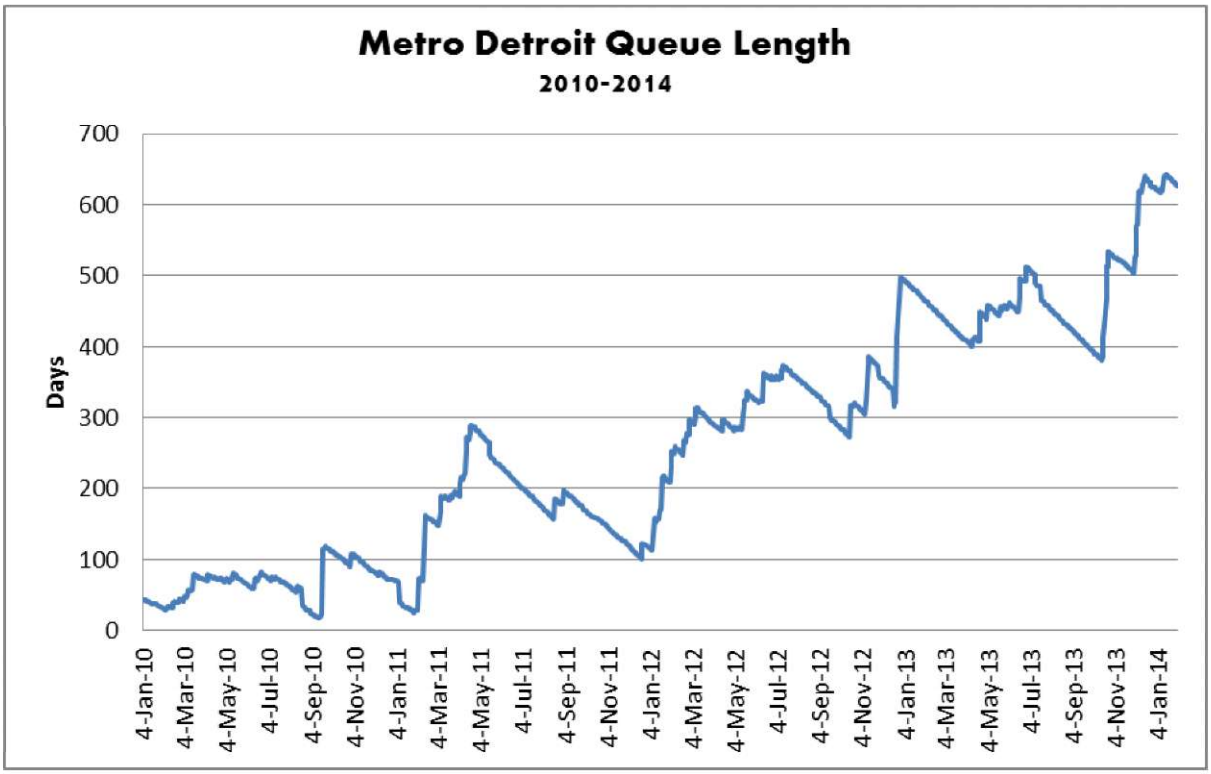
[1139] Subcommittee interview of Leo Prichard (10/6/2014).

[1140] See In Re Aluminum Warehousing Antitrust Litigation, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(describing allegations contained in multiple the class action lawsuit complaints).

[1141] See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?," hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 3 - 4, http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm.

"short-lived" and the result of inclement weather or other discreet events such as a labor strike.[1142] That changed in 2010, the same year Goldman purchased Metro.

Beginning in 2010, as reflected in the graph below, Metro's Detroit warehouses developed a queue which, overall, grew longer and longer each year.[1143] In March 2010, just after Goldman purchased Metro, the Detroit warehouses had a queue that was slightly more than 40 days.[1144] A year later, in March 2011, the Detroit queue had more than tripled, exceeding 150 days.[1145] By March 2012, it had doubled again, to nearly 300 days.[1146] The queue passed 500 days in October 2013, and 600 days two months later.[1147] In May 2014, the queue to get aluminum out of Metro's Detroit warehouses reached a stunning 674 days.[1148] That meant an aluminum owner seeking to remove its aluminum from the Detroit warehouses would have to wait in line – paying rent – for almost two years.



Source: Prepared by the Subcommittee using information provided by Harbor Aluminum. See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

[1142] 9/5/2014 letter from The London Metal Exchange to Subcommittee, LME_PSI0000001 - 004, at 002.
[1143] The queue length records were compiled by Harbor Aluminum using LME records, and produced to the Subcommittee. See "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses," prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.
[1144] Id.
[1145] Id.
[1146] Id.
[1147] Id.
[1148] Id.

Large aluminum users have denounced the Detroit queue as unreasonable and damaging to aluminum markets, and have called the LME's current warehousing system "dysfunctional and prone to manipulation."[1149] In addition, as described above, the increases in the Metro Detroit queue were highly correlated with increases in the aluminum Midwest Premium over the same time period which, in turn, became a growing component of the all-in price of aluminum. Some industrial aluminum users have charged that the longer queues led to higher Midwest Premium prices, costing their companies millions of dollars.[1150] More broadly, one aluminum user, MillerCoors, estimated that the dysfunctional aluminum market had imposed an estimated "additional $3 billion expense on companies that purchase aluminum."[1151] While long queues and increasing Midwest Premium prices were hurting aluminum users, the LME has said that the emergence of increasing premiums "convey[ed] an advantage to the expertise of merchants and brokers, who have built-up strong modelling capabilities around premiums and queues."[1152] In addition, as described earlier, at the same time Goldman was approving Metro practices that lengthened its queue, it was ramping up its own aluminum trading operations.

Driving the Queue Length. The Subcommittee investigation found that a significant contributor to the Detroit queue length was a number of large warrant cancellations by a small group of financial institutions, including Deutsche Bank; Red Kite, a London hedge fund; Glencore, a commodities trading firm based in Switzerland; JPMorgan; and Goldman. Deutsche Bank, Red Kite, and Glencore were all involved in "merry-go-round" deals in which aluminum was loaded out of one Metro warehouse and loaded into another. The cancellations involving JPMorgan and Goldman involved metal that they held for themselves. Each of the five financial firms cancelled 100,000 metric tons or more, an amount that would have been unprecedented for Metro's Detroit warehouses just a few years earlier.

Merry-Go-Round Deals. Metro's merry-go-round deals took place in 2010, 2012, and 2013. According to a Metro executive, the deals began in the summer of 2010, just a few months after Goldman acquired Metro, when Metro became concerned that owners of aluminum in its warehouses were removing the metal from its warehouses and storing it elsewhere, leading to a loss of revenue.[1153] In an effort to curb that loss, Metro executives and the Metro Board of Directors, composed exclusively of Goldman employees, made a strategic decision to – for the first time – "market" Metro incentives to metal owners that already had metal stored in Metro's warehouses.[1154]

[1149] 9/9/2013 letter from Aluminum Users Group to LME, "13/208:A201;W076," PSI-AlumUsersGroup-01-000002 - 008, at 004.

[1150] "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 9, http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm.

[1151] Id., prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 4.

[1152] 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, at 29, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

[1153] Subcommittee interview of Christopher Wibbelman (10/6/2014).

[1154] Id.

Ultimately, those efforts led to at least six deals with three customers: Deutsche Bank, Red Kite, and Glencore.[1155] Although each deal involved millions of dollars, none was formalized in a signed contract.[1156] Instead, details were spelled out in an unsigned contract, emails, and invoices.[1157]

In each deal, Metro provided financial incentives to the owner of the aluminum stored in its warehouses to: (1) wait in the queue; (2) upon reaching the head of the queue, load out its metal from a Metro warehouse; (3) deliver the metal to another nearby Metro warehouse; and (4) warrant the metal while in the second Metro warehouse. Each deal led to aluminum being loaded out of one Metro warehouse in Detroit and loaded right back into another, a practice that one Metro forklift operator later told the New York Times amounted to a "merry-go-round of metal."[1158]

Because Metro used a single exit queue for all of its Detroit warehouses combined, when a warehouse client in a merry-go-round deal got to the head of the queue and started loading out metal, that client essentially blocked the exits for any other metal owner seeking to leave the Metro Detroit warehouse system. In addition, instead of 1,500 or 3,000 metric tons of aluminum leaving the Metro warehouse system each day as envisioned by the LME's daily minimum load out requirement, in the merry-go-round deals, the aluminum that left the Detroit warehouses nearly all came right back into the Metro warehouse system.[1159] The net impact for Metro was that, each day in which the front of the queue was occupied by a metal owner executing a merry-go-round deal, its warehouses lost virtually no metal. At the same time, the merry-go-round deals made money for Metro, not only by preventing the loss of metal, but also by helping to lengthen the Detroit queue, extending the period during which other metal owners had to pay rent to Metro.

Increases in the Detroit queue length were highly correlated with increases in the Midwest Premium, which ultimately affected the entire aluminum market. Goldman, through its employees on the Metro Board of Directors, reviewed and approved each of the merry-go-round deals that lengthened the queue, and throughout the years in which the merry-go-round transactions took place, Goldman actively traded aluminum.

(i) Deutsche Bank Merry-Go-Round Deal

Goldman acquired Metro in February 2010, and Metro conducted its first merry-go-round deal in September 2010, with DB Energy Trading, a subsidiary of Deutsche Bank.[1160] It

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[1155] Subcommittee interviews of Jacques Gabillon, (10/14/2014) and Christopher Wibbelman (10/24/2014). See also 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004.

[1156] Subcommittee interview of Christopher Wibbelman (10/6/2014).

[1157] See, e.g., Glencore Ltd. invoice to Metro (6/21/2013), GSPSICOMMODS00046873; Red Kite Master Fund Ltd. invoice to Metro (11/13/2012), GSPSICOMMODS00046876.

[1158] Subcommittee interview of Jacques Gabillon (10/14/2014); "A Shuffle of Aluminum, but to Banks, Pure Gold," New York Times, David Kocieniewski, http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?pagewanted=all&_r=1&.

[1159] The vast majority of the metal that came back into a Metro warehouse was ultimately placed back on warrant, while, as of earlier this year, a fraction of it had not been placed on warrant.

[1160] 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

involved 100,000 metric tons of aluminum, most of which was loaded out of one Metro warehouse and immediately loaded into another. The transaction was not suggested by Deutsche Bank, but by Metro personnel, and reviewed and approved by Metro senior executives and the Metro Board of Directors' Commercial Decisions Subcommittee, composed exclusively of Goldman employees.[1161]

According to Deutsche Bank, the 100,000 metric tons of aluminum at issue was held by Deutsche Bank for its own account as part of a so-called "cash and carry" trade.[1162] Consistent with its general practice, Deutsche Bank entered into negotiations with Metro's agent seeking discounted rent.[1163] According to Deutsche Bank, Metro declined to provide the discounted rent directly, but suggested instead that Deutsche Bank move the metal to a cheaper off-warrant storage site at other Metro warehouses.[1164] According to Deutsche Bank, Metro proposed that Deutsche Bank cancel the warrants for the aluminum stored in the LME-approved warehouses, wait in the queue to load out the metal, transport the aluminum to other Metro warehouses, and after a period of less expensive or free rent, re-warrant the metal.[1165]

While both Deutsche Bank and Metro have acknowledged to the Subcommittee that the proposed transaction did, in fact, occur, no formal written contract was signed by both parties. Instead, the terms of the agreement were spelled out in a contract that was signed by Deutsche Bank employees,[1166] but which Metro CEO Christopher Wibbelman told the Subcommittee was never signed by Metro.[1167] The Subcommittee understands that an agreement was nevertheless reached generally in line with the terms of the contract signed by Deutsche Bank.

The agreement involved Deutsche Bank cancelling warrants associated with 100,000 metric tons of aluminum stored in Metro's Detroit warehouses, requesting "the maximum number of [load-out] Slots" in the queue, loading the metal out of the warehouses, and transporting the metal to other Metro warehouses in Detroit.[1168] By requesting the "maximum number of Slots," Deutsche Bank essentially ensured that the aluminum in the deal would fill Metro's load-out requirement from the day the first lot of Deutsche Bank metal reached the front

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[1161] Subcommittee interview of Christopher Wibbelman (10/6/2014).

[1162] Subcommittee briefing by Deutsche Bank legal counsel (10/22/2014). A "cash and carry" trade occurs when a trader buys physical metal, often through LME warrants, and enters into a forward contract to sell the metal at a specified price on a specified date in the future. The trader seeks to set a price in the forward contract that will exceed the cost of storing, insuring, and financing the purchase of the metal during the period until the sale is executed. The prolonged "contango" in the aluminum market during 2011 and 2012, in which future aluminum prices were higher than current prices, made these types of trades profitable. Banks and their holding companies, with access to low-cost financing, increasingly entered into cash and carry trades. For more information on these trades, see, e.g., "Aluminum Premiums Seen by Rusal Exceeding 500 on Demand." Bloomberg, Agnieszka Troszkiewicz (6/3/2014). http://www.bloomberg.com/news/2014-06-03/aluminum-premiums-seen-by-rusal-exceeding-500-on-demand.html; 11/7/2014 email form Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.

[1163] 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.

[1164] Subcommittee briefing with Deutsche Bank legal counsel (10/22/2014).

[1165] Id.

[1166] See 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

[1167] Subcommittee interview of Christopher Wibbelman (10/6/2014).

[1168] 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.

of the queue until all of its aluminum was loaded out, which would take more than 65 business days at the minimum load-out rate of, then, 1,500 metric tons per day. The agreement also involved Metro capping Deutsche Bank's rent while its aluminum was in the queue waiting to be loaded out.[1169]

According to the unsigned contract, Deutsche Bank was responsible for paying $42.95 per metric ton in costs to move the metal from one Metro warehouse to another. However, the contract also contained a provision in which Metro committed to pay the bank the same amount, $42.95, for every metric ton of metal that was subsequently re-warranted and stored at a Metro warehouse. The effect was to offset Deutsche Bank's costs so long as its aluminum was re-warranted and stored in another Metro warehouse, essentially enabling Deutsche Bank to move its metal to the new location for free.[1170] In addition, according to Deutsche Bank, Metro then provided the bank with discounts equal to "roughly 15 cents/ton/day for the period from September 15, 2010 to February 16, 2011," a substantial savings.[1171]

Finally, the agreement imposed a substantial penalty on Deutsche Bank if it elected to do anything other than re-load the aluminum into a new Metro Detroit warehouse and re-warrant it. The agreement provided that, if Deutsche Bank sold the metal to a third party at any point during the five months covered by the deal, it would have to pay Metro a fee of $65 per metric ton, or about $6.5 million for 100,000 metric tons of aluminum.[1172]

The agreement essentially provided Deutsche Bank with the rent discount it had sought, but instead of applying the discount in a straightforward manner to the aluminum already stored in a Metro warehouse – a discount permissible under LME rules – Metro required Deutsche Bank to cancel its warrants, join the queue, leave the warehouse, and move its metal to a new Metro warehouse. The question is why Metro imposed that merry-go-round process as the condition for Deutsche Bank's rent discount.

There appears to have been no logistical reason to move the metal outside of the LME-approved storage space. None of the Metro Board of Directors presentations from that period discuss a shortage of LME-approved storage space. To the contrary, they show LME inventory levels in Detroit dropping immediately following the deal.[1173] Further, Metro CEO Christopher Wibbelman told the Subcommittee that he was not aware of any shortage of LME-storage capacity in Metro's Detroit facilities at that time.[1174]

The most immediate consequence of the transaction was Deutsche Bank's cancellation of warrants on 100,000 metric tons of aluminum, which immediately contributed to the queue at the Detroit warehouses. On September 15, 2010, there was a short queue in Detroit of about 20

[1169] Id.
[1170] As stated by Deutsche Bank's legal counsel, "the net cost to Deutsche Bank of moving this metal was zero." 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003, at 002.
[1171] Id.
[1172] 9/15/2010 Warrant Finance Agreement between DB Energy Trading LLC and Metro, GSPSICOMMODS00047438.
[1173] See, e.g., 11/15/2010 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009559 - 614, at 566.
[1174] Subcommittee interview of Christopher Wibbelman (10/6/2014).

days.[1175] One week later, on September 22, 2010, a few days after Deutsche Bank cancelled the warrants, Metro had a queue of nearly 120 days, a significant portion of which was attributable to the bank's warrant cancellation.[1176] The presence of that nearly 120-day queue meant that any metal owner that cancelled warrants after September 22, 2010, would not only have to wait behind Deutsche Bank for their metal to be loaded out of the warehouse, but would also have to pay rent to Metro while waiting.

Of the original 100,000 metric tons of aluminum subject to the deal, approximately 70,000 metric tons left one Metro warehouse for another Metro warehouse in Detroit, and were then re-warranted.[1177] The remaining 30,000 metric tons were placed back on warrant before they were actually loaded out.[1178] Thus, in the end, all 100,000 metric tons were back on warrant at Metro at the end of the deal. The re-warranting of that metal ensured that if Deutsche Bank wanted to exit the Metro warehouse system in the future, it would have to rejoin the queue once more before it could take possession of its aluminum.

Expressing Concerns. Metro's merry-go-round transaction with Deutsche Bank raised concerns with at least one senior Metro executive. In early December 2010, Mark Askew, Metro's Vice President of Marketing, sent an email to Metro CEO Christopher Wibbelman expressing concerns about the Deutsche Bank deal.[1179] Mr. Askew relayed that a customer had "asked about rumours they'd heard on 100 k cancellation in Sep[tember] that we were blocking others."[1180] The only 100,000 metric ton cancellation in September at Metro was the one involving Deutsche Bank. The rumor, as relayed by Mr. Askew, focused explicitly on whether Metro was "blocking others."

Mr. Askew's email also expressed his own concern about the transaction: "I remain concerned, as I have expressed from [the] start, regarding 'Q management' etc (esp in light of conversation Michael said he had with Paco on the same a few weeks back)."[1181] Mr. Wibbelman explained to the Subcommittee that Mr. Askew had "never liked the idea" of offering financial incentives to existing Metro customers.[1182] Mr. Wibbelman denied that the Deutsche Bank deal was designed to help put a queue in place to block other clients from quickly leaving the Detroit warehouses.[1183]

As explained earlier, the longer Metro Detroit warehouse queue had two immediate consequences. It forced other metal owners to wait in line before they could exit and pay rent to

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[1175] See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.
[1176] Id.
[1177] 11/7/2014 email from Deutsche Bank legal counsel to Subcommittee, PSI-DB-01-000001 - 003
[1178] Id.
[1179] 12/4/2010 email from Mark Askew, Metro, to Christopher Wibbelman, Metro (12/4/2010), GSPSICOMMODS00047422 - 430.
[1180] Id.
[1181] Id. The Subcommittee was told that "Paco" referred to a competitor, Pacorini Metals, which operated a metals warehouse in Vlissingen, Netherlands, which was also developing an unprecedented queue. Subcommittee interview of Christopher Wibbelman (10/24/2014).
[1182] Id. Mr. Wibbelman further told the Subcommittee that he believed that part of Mr. Askew's dislike of the deals was that Mr. Askew was not a part of them and was not compensated for them as a salesperson. Id.
[1183] Id.

Metro while waiting. In addition, the longer queue was highly correlated with higher Midwest Premiums which, according to some experts and industrial users, increased the all-in price for aluminum. Higher aluminum prices increased the value of aluminum stockpiles and could also be used to benefit trading activities in the aluminum market.

(ii) Four Red Kite Merry-Go-Round Deals

Metro conducted four merry-go-round deals with Red Kite, a London-based hedge fund that is active in the physical commodities markets. In each of the years 2011, 2012, and 2013, Red Kite, through either Red Kite Master Fund Ltd. or Red Kite Management Ltd., was one of Metro's top ten customers.[1184] The four merry-go-round deals all took place in 2012, and involved a total of nearly 440,000 metric tons of aluminum.[1185] Approximately 410,000 metric tons were loaded out of Metro warehouses and right back into other Metro warehouses.[1186] Because a small amount of metal never left Metro, a total of nearly 95% of the nearly 440,000 metric tons of aluminum either never left Metro or was loaded out of Metro only to be loaded back in to Metro warehouses. Each of the four Red Kite deals, like the Deutsche Bank deal, was reviewed and approved by Metro senior executives and the Goldman employees on the Metro Board's Commercial Decisions Subcommittee.[1187]

First Three Red Kite Deals. The first three deals with Red Kite took place from January through March of 2012. In those transactions, Metro offered financial incentives for Red Kite to cancel warrants on a combined total of 250,000 metric tons of aluminum, wait in line, load out the metal from Metro warehouses, load it back into other Metro warehouses, and re-warrant the metal.[1188] The incentives offered by Metro included: (1) paying a "day one" cash incentive to the metal owner when the metal warrants were cancelled,[1189] (2) offering a period of free rent, and (3) paying another cash incentive for re-warranting.[1190] As in the Deutsche Bank deal, each transaction required Red Kite to pay a substantial cash penalty to Metro if Red Kite did anything other than re-load the metal into a Metro warehouse and re-warrant it.[1191] The terms for all three deals, each of which involved millions of dollars, were set out, not in formal signed contracts, but in emails and invoices.[1192]

Expressing Additional Concerns. Around the same time that Metro entered into the first of the series of Red Kite deals, in February 2012, the Metro Vice President of Marketing, Mark Askew, sent an email to Michael Whelan, Metro's Vice President of Business

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[1184] See 10/20/2014 letter from Goldman legal counsel to Subcommittee, GSPSICOMMODS00047431 - 432.
[1185] See 12/19/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009332 - 354, at 348 (indicating a combined total of 410,000 metric tons, which later increased by another 30,000 metric tons, when the final deal rose from 160,000 to nearly 190,000 warrants).
[1186] Id.
[1187] Subcommittee interview of Jacques Gabillon (10/14/2014).
[1188] See 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449, at 437.
[1189] This incentive may have been intended to off-set fees associated with the subsequent loading out of metal.
[1190] 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS0000942 - 449, at 437.
[1191] Id.
[1192] Subcommittee interview of Christopher Wibbelman (10/6/2014).

Development, copying Metro CEO Christopher Wibbelman and Metro Chief Operating Officer Leo Prichard, again expressing concerns about engaging in "queue management."[1193]

Neither Mr. Wibbelman nor Mr. Prichard responded.[1194] Mr. Whelan responded to Mr. Askew's email by defending the transaction:

> "[W]e are not participating in queue management. We have done an off warrant storage deal with a customer who was going to remove the metal and place [it] in an off warrant warehouse. We were able to provide an off-warrant storage option and make a commercial deal that doesn't in any way violate the rules of the LME."[1195]

While Mr. Whelan's email described the Red Kite deal as "off warrant storage," all of the 250,000 metric tons of metal involved in the first three deals were subsequently re-warranted.[1196] So were the approximately 160,000 tons of aluminum moved to new Metro warehouses in the fourth and final deal. In addition, while Mr. Whelan stated that the merry-go-round transactions did not violate LME rules, Metro told the Subcommittee it had never actually consulted with the LME to obtain its view of the deals.[1197]

Although Mr. Askew's concerns about how the queue was being managed were directly communicated in writing to senior Metro employees on two occasions, Jacques Gabillon, Chairman of the Metro Board of Directors, told the Subcommittee that he was not aware of them.[1198] While the deals themselves were discussed at Metro's Board meetings, Mr. Askew's concerns appear to have not been.[1199] Minutes from a March 2012 Metro Board meeting where the "off-warrant deals" were discussed, for example, do not mention Mr. Askew's concerns or indicate any discussion of whether the deal was appropriate or consistent with LME rules.[1200]

Mr. Askew's earlier email raised the issue of whether the merry-go-round deals were being used for "blocking others" – preventing metal owners from gaining possession of their stored metal within a reasonable period of time. The deals also created a false impression that metal was leaving the Metro system when, in fact, the metal was simply being moved around. Another concern is that the merry-go-round deals contributed to a longer warehouse queue which, in turn, was highly correlated with higher Midwest Premium prices, leading to charges by industrial users that the queues were distorting the aluminum market and increasing aluminum

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[1193] 2/25/2012 email from Mark Askew, Metro, to Michael Whelan, Leo Prichard and Christopher Wibbelman, Metro, GSPSICOMMODS00047422 - 430, at 423.
[1194] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1195] 2/25/2012 email from Michael Whelan, Metro, to Mark Askew, Leo Prichard and Christopher Wibbelman, Metro, GSPSICOMMODS00047422, at 423.
[1196] See 12/19/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009332, at 348.
[1197] Subcommittee interviews of Christopher Wibbelman (10/24/2014) and Jacques Gabillon (10/14/2014). As discussed below, without commenting specifically about Metro, the LME told the Subcommittee that "the LME would view such behavior as a contravention of the "spirit" of the relevant requirements, it may be difficult to argue that it constituted a contravention of the "letter" of those requirements."
[1198] Subcommittee interview of Jacques Gabillon (10/14/2014).
[1199] Subcommittee interviews of Christopher Wibbelman (10/6/2014) and Jacques Gabillon (10/14/2014).
[1200] 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423 - 449.

costs for consumers. There is no record, however, of any of those problems being discussed at Metro Board meetings at the time.

Fourth Red Kite Deal. After Mr. Askew's email, Metro entered into a fourth merry-go-round deal with Red Kite. That fourth and final deal between Red Kite and Metro was the largest. On November 5, 2012, Metro's warehouse manager emailed representatives of Red Kite about a large amount of aluminum that Red Kite was then storing at Metro warehouses in Detroit.[1201] The metal was being held in the name of Barclays Bank as part of a financing agreement between the bank and Red Kite.[1202] When the Metro manager emailed Red Kite, the aluminum was still under LME warrant in the Detroit warehouses.[1203]

The Metro email contained terms for another merry-go-round deal under which Red Kite was to "immediately" cancel warrants for 150,000 metric tons of metal,[1204] place the metal "asap" in the Detroit queue and, upon reaching the front of the queue, load the metal out of one Metro warehouse and into another Metro warehouse in the Detroit area.[1205] In exchange, Metro agreed to pay Red Kite cash incentives totaling $196 per metric ton of metal that completed the loop and was re-warranted.[1206]

The cash incentives had two components. Like the previous Red Kite deals, Metro promised to pay a "day one" incentive, in this case equal to $36 per metric ton, when Red Kite cancelled the warrants.[1207] The deal provided a second cash incentive of $160 per metric ton when the metal was re-warranted.[1208] Together, Red Kite would receive $36 per metric ton upon cancellation and another $160 per metric ton upon re-warranting at other Metro warehouses, for a combined cash incentive of $196 per metric ton.[1209] In addition, Metro committed to discount the rent it would charge Red Kite at the new warehouse locations and, as in other deals, pay the cost of shipping the metal from one warehouse to the other.

While Red Kite retained the right to either sell the metal when it reached the front of the queue or move it to a warehouse company other than Metro, as before, the Metro agreement

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[1201] See 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite. GSPSICOMMODS00046684.
[1202] See 9/26/2014 email from Barclays Capital Inc. to Subcommittee. "Barclays [BARC-AMER.FID670446]," PSI-Barclays-02-000001.
[1203] See 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite, GSPSICOMMODS00046684.
[1204] Id. The total amount of aluminum in the transaction later increased to nearly 190,000 tons. 4/15/2012 Simmons & Simmons letter to LME, Appendix A. GSPSICOMMODS00046850.
[1205] 11/5/2012 email from Gabriella Vagnini, Metro, to Barry Feldman, Red Kite, GSPSICOMMODS00046684.
[1206] See 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850, at 854.
[1207] See 3/21/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009423, at 437. See also Red Kite Master Fund Limited invoice to Metro (11/13/2012), GSPSICOMMODS00046876 (reflecting an amount of "USD 36.00 PMT").
[1208] See, e.g., 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046879 (reflecting an amount of "USD 160.00 PMT"); 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850, at 854.
[1209] The "day one" incentive may have been intended to offset certain fees and costs associated with loading out the metal.

imposed a penalty if Red Kite did so. Specifically, if Red Kite did not direct the metal back to Metro warehouses, Red Kite would have to pay Metro a penalty of about $66 per metric ton.[1210]

The transaction proposed by Metro involved tens of millions of dollars, but was never formalized in a signed contract; the November 5 Metro email and a handful of invoices[1211] appear to be the only documentation of the details of the agreement.[1212] Red Kite started cancelling its warrants just two days later, on November 7, 2012. Over the next six weeks, the hedge fund continued to cancel warrants as the amount of aluminum included in the deal reached nearly 190,000 metric tons.[1213] Prior to the deal, the queue in Detroit was just over 300 days long.[1214] By the end of December, just after the last of Red Kite's cancellations, the queue was just under 500 days, with a significant portion of that increase attributable to Red Kite's warrant cancellations.[1215]

In the end, of the nearly 190,000 metric tons covered by the fourth Red Kite merry-go-round deal, about 182,000 metric tons were loaded out of Metro warehouses.[1216] Of that, about 160,000 metric tons simply went out of some Metro warehouses and back into other Metro warehouses.[1217] Thus, nearly 90% of the metal shipped as pursuant to the deal went from Metro right back to Metro. Metro records show that, pursuant to this deal, Metro arranged for more than 4,300 truck shipments, moving the metal from some Metro warehouses to other Metro warehouses in the Detroit area, at a cost of more than $1 million.[1218] That came on top of the $26 million that Red Kite billed Metro for incentive payments under the deal.[1219]

(iii) Glencore Merry-Go-Round Deal

In February 2013, Metro entered into the sixth and final merry-go-round deal disclosed by Goldman. The deal was struck with Glencore, a Swiss company active in physical commodity markets. The transaction involved Glencore's loading out about 91,400 metric tons of aluminum from Metro warehouses in Detroit, only to load the same amount into other Metro

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[1210] The $66 per ton fee represented the cost of the $36 prepaid incentive plus an additional $30 per ton. 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850. at 854.

[1211] Subcommittee interview of Christopher Wibbelman (10/6/2014). See also, e.g., 11/13/2012 Red Kite Master Fund Ltd. invoice to Metro. GSPSICOMMODS00046876 (reflecting an amount of "USD 36.00 PMT"); 12/20/2012 Red Kite Master Fund Ltd. invoice to Metro. GSPSICOMMODS00046877; 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro, GSPSICOMMODS00046878; 1/28/2014 Red Kite Master Fund Ltd. invoice to Metro. GSPSICOMMODS00046879 (reflecting an amount of "USD 160.00 PMT").

[1212] Subcommittee interview of Christopher Wibbelman (10/6/2014)

[1213] 4/15/2012 Simmons & Simmons letter to LME, at 4, GSPSICOMMODS00046850.

[1214] See undated "HARBOR's estimated aluminum load-out waiting time in LME Detroit Warehouses vs HARBOR's MW Transactional Premium," prepared by Harbor Aluminum, PSI-HarborAluminum-03-000004.

[1215] Id..

[1216] 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850. The remaining 21,600 metric tons – totaling about 10% of the original deal amount – were shipped outside of the Metro warehouse system, because Red Kite had sold the metal to a third party.

[1217] The 21,600 tons were purchased from Red Kite and shipped to another warehouse. See 4/15/2012 Simmons & Simmons letter to London Metal Exchange, Appendix A, GSPSICOMMODS00046850.

[1218] 4/15/2012 Simmons & Simmons letter to LME, shipment spreadsheet, GSPSICOMMODS00046902.

[1219] Id. at Invoice Summary, GSPSICOMMODS00046872.

warehouses nearby, and warranting the metal. Metro's records reflect that all of the approximately 90,000 metric tons simply shuffled between different Metro warehouses.[1220]

The Glencore deal differed from Metro's other merry-go-round agreements in that it did not require Glencore to first cancel its warrants. That was because the company had already cancelled the warrants, and the metal was already in the queue to exit Metro's warehouses.[1221] Prior to execution of the deal, as with the other merry-go-round deals, the Glencore deal was reviewed and approved by senior Metro executives and by the Metro Board's Commercial Decisions Subcommittee, composed exclusively of Goldman employees. In addition, it was presented to the full Metro Board which, again, consisted solely of Goldman employees.[1222]

According to Goldman, the Glencore deal consisted of the the following components. The first component, which covered about 50,000 metric tons of aluminum, was similar to past deals, in that Metro agreed to pay a cash incentive, this time $198 per ton, for any metal that the company subsequently re-warranted at a Metro warehouse.[1223]

The second component involved two physical aluminum swaps. In the first swap, Metro arranged for Glencore to receive 21,000 metric tons of aluminum free on truck (FOT) in Baltimore from another metal owner, plus $15 per metric ton from Metro, in return for Glencore's delivering to that third party warrants for 21,000 metric tons in Detroit.[1224] Mr. Wibbelman explained that Metro was able to help arrange the swap, because the owner of the aluminum in Baltimore had previously committed to shipping more than that amount, which he estimated at approximately 80,000 metric tons, to Metro.[1225] Mr. Wibbelman explained that Metro simply asked the metal owner to replace the obligation to deliver 21,000 metric tons to Metro with an obligation to deliver 21,000 metric tons to Glencore. The second swap involved Metro's arranging for Glencore to receive 20,000 metric tons of aluminum FOT in Mobile from yet another metal owner, plus $20 per metric ton from Metro, in return for Glencore's again delivering to that third party warrants for 20,000 metric tons in Detroit.[1226]

By engaging in this transaction, Glencore was able to obtain 41,000 metric tons of aluminum from other warehouses, plus cash. Glencore told the Subcommittee that this

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[1220] However, according to Glencore, at least 70,000 metric tons was metal that had just previously been on-warrant at Metro. 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001, at 003. According to Goldman and Glencore, the deal involved a warrant incentive for 50,000 metric tons, as well as two swaps, one for 20,000 metric tons and another for 21,000. In addition, according to Glencore there was another deal that involved a separate warrant incentive for 25,000 to 75,000 additional metric tons. 11/7/2014 email from Glencore to Subcommittee. PSI-Glencore-01-000001 - 003, at 003.

[1221] 4/15/2012 Simmons & Simmons letter to LME, Appendix A, GSPSICOMMODS00046850; 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001 - 003, at 002.

[1222] See 4/15/2012 Simmons & Simmons letter to LME, at 6, GSPSICOMMODS00046839; 12/19/2012 "MITSI Holdings LLC Board of Directors Meeting," prepared by Metro and Goldman, GSPSICOMMODS00009332 - 354, at 348.

[1223] See 6/21/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046873 (reflecting 50,046.872 metric tons at $198 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

[1224] See 9/24/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046875 (reflecting 21,407.022 metric tons at $15 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

[1225] Subcommittee interview of Christopher Wibbelman (10/24/2014).

[1226] See 6/21/2013 Glencore Ltd. invoice to Metro, GSPSICOMMODS00046874 (reflecting 19,949.939 metric tons at $20.15 per metric ton); Subcommittee briefing by Glencore (10/31/2014).

transaction also allowed Glencore to save on the costs on shipping metal from Detroit.[1227] According to Glencore, Metro was able to keep approximately 91,000 metric tons in its Detroit warehouses on warrant, as well as save the costs of shipping 21,000 metric tons of metal to Detroit from Baltimore.[1228] When the aluminum covered by the merry-go-round deal reached the head of the queue, each day on which that metal was loaded out, Metro experienced no net loss of metal, while other metal owners were effectively blocked from leaving the Metro system.[1229]

As a result of the deal, all 91,000 metric tons covered by the deal were subsequently warranted.[1230] To execute the transaction, Metro arranged for more than 2,200 individual truck shipments between Metro warehouses in the Detroit area and paid nearly $500,000 for those shipments.[1231] In addition, a Metro invoice summary indicated that, as of March 2014, the warehouse had been billed about $11 million by Glencore for the incentive payments under the agreement.[1232]

At about the time of this deal, Michael Whelan, who had taken the lead on this deal as well as the other merry-go-round transactions, was promoted.[1233] After more than a dozen years at Metro, Mark Askew resigned.[1234]

Transporting Merry-Go-Round Metal. When asked whether the merry-go-round deals complied with LME rules, Jacques Gabillon, Chairman of the Metro Board of Directors, as well as head of Goldman's Global Commodities Principal Investments group, told the Subcommittee that they did.[1235] He stated that, if metal associated with cancelled warrants was loaded back into the same warehouse from which it came, that would have violated an LME requirement that precludes warehouses from counting metal that is off warrant but "still on the Warehouse's premises" toward their load-out obligations.[1236] But the LME rules did not preclude a warehouse from loading out metal and then moving into a nearby warehouse belonging to the same company, according to Mr. Gabillon.[1237] He told the Subcommittee that, to ensure no LME

[1227] Subcommittee briefing by Glencore (10/31/2014).
[1228] Id.
[1229] While the deal did not involve new cancellations, and so did not, by itself, lengthen the queue, by remaining in line, it blocked the exits and ensured that metal that would otherwise have been loaded out of Metro's system stayed within Metro.
[1230] 4/15/2012 Simmons & Simmons letter to LME. Appendix A. GSPSICOMMODS00046850. According to Glencore, approximately 71,000 metric tons of the metal that was ultimately placed on warrant at Metro was previously on warrant at Metro, while the remaining 20,000 tons were not previously on warrant at Metro. 11/7/2014 email from Glencore to Subcommittee, PSI-Glencore-01-000001 - 003, at 003. Nevertheless, the net effect was that Metro kept 91,000 metric tons on warrant at Metro.
[1231] Id. at shipment spreadsheet, GSPSICOMMODS00047097.
[1232] Id. at Invoice Summary, GSPSICOMMODS00046872.
[1233] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1234] See "Marketing vice president Askew quits metals warehouse" Reuters (4/12/2013), Metrohttp://www.reuters.com/article/2013/04/12/metals-warehousing-askew-idUSL5N0CZ1HA20130412.
[1235] Subcommittee interview with Jacques Gabillon (10/14/2014).
[1236] Id. See also "Terms and conditions applicable to all LME listed warehouse companies," LME website, at ¶6.3.2, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Proposed%20revised%20Warehouse%20Agreement.pdf.
[1237] Subcommittee interview with Jacques Gabillon (10/14/2014).

violation occurred, Metro had set up a system to exclude the originating warehouse from the list of possible destinations for metal being loaded out of that warehouse.[1238] While Mr. Gabillon said that the Metro merry-go-round deals complied with the LME load-out rules, the LME itself has not, to date, made a public determination on that issue, as discussed below.

The Metro system for transporting metal that was part of a merry-go-round deal produced some unusual metal movements. For example, on October 2, 2013, several trucks were loaded with aluminum at a Metro warehouse on Lafayette Street in Mount Clemens, Michigan, destined for another Metro warehouse about twelve miles away. That same day, several trucks were loaded with aluminum at a third Metro warehouse in New Baltimore, Michigan, and shipped to the Lafayette Street warehouse. The next day, the Lafayette Street warehouse again shipped out several truckloads of aluminum only to be on the receiving end of metal shipments the day after that.[1239] In short, over the space of two days, the Lafayette Street warehouse saw truckloads of virtually identical aluminum shipments depart, arrive, depart, and arrive again.

On another occasion, in November 2013, Metro loaded aluminum out of one warehouse and moved it into another warehouse about 200 feet away across a parking lot.[1240] Goldman told the Subcommittee that warehouse personnel didn't know whether the metal was moved across the parking lot on the property to the second warehouse, or instead was driven around the block on public streets.[1241] In any event, multiple trucks trundled tons of aluminum from one warehouse location to the other just a few feet away.[1242]

On another three-day period, in December 2013, pursuant to a merry-go-round deal, trucks carrying tons of aluminum transported that aluminum to and from the exact same warehouses in a circular pattern at odds with rational warehouse activity. The trucks loaded the aluminum from the first warehouse, unloaded it at the second, picked up different lots of aluminum from the second warehouse, and drove it to the first where it was unloaded. Those trucks bearing similar loads of aluminum did not transport the metal for free, but imposed substantial costs on Metro to carry out the transactions.

Thousands of similar shipments occurred during the course of Metro's merry-go-round deals. In fact, according to Goldman, between February 2010 and January 2014, more than 625,000 tons of aluminum were loaded out of a Metro warehouse in Detroit only to be loaded right back into another Metro facility in Detroit, all part of the Metro metal merry-go-round.[1243] In the end, while the truck movements created a false impression that metal was actually leaving the Metro warehouses, in fact, almost all of the metal was simply being moved around the warehouse system in Detroit.

Reacting to the Metro Merry-Go-Round. Metro's practice of loading metal out of one Metro warehouse only to load it back into another Metro warehouse came to the public's attention through a July 20, 2013, front-page New York Times article that disclosed the practice

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[1238] Id.
[1239] See 4/15/2012 Simmons & Simmons letter to LME, chart, GSPSICOMMODS00046906 - 615.
[1240] See Spreadsheet prepared by Goldman, GSPSICOMMODS00046902, at 974 - 975.
[1241] Subcommittee interview of Christopher Wibbelman (10/24/2014).
[1242] See Spreadsheet prepared by Goldman, GSPSICOMMODS00046902, at 974 - 975.
[1243] 10/22/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-22-000001 - 004, at 002.

and raised fresh concerns about the integrity of the aluminum market.[1244] The article quoted a former Metro forklift operator who described a "merry-go-round of metal," and indicated that the practice had become a running joke among some warehouse workers.[1245]

On July 23, 2013, the Senate Banking Subcommittee on Financial Institutions and Consumer Protection held a hearing on bank involvement with physical commodities, and focused attention more broadly on the Metro Detroit warehouse queue, raising concerns that it was distorting the aluminum market and inflating aluminum prices.[1246] One witness from MillerCoors testified that companies like Metro had created bottlenecks that slowed the removal of aluminum from their warehouses, and forced metal owners to pay additional rent. He further testified that those actions had cost MillerCoors "tens of millions of dollars in excess premiums over the last several years," and imposed an estimated "additional $3 billion expense on companies that purchase aluminum."[1247] In an attempt to quiet the uproar, Goldman issued a statement offering, as one media report put it, "to speed up delivery of aluminum to users of the metal and proposed changes to industry rules amid claims that its warehouse unit created shortages and drove up prices."[1248]

Despite that offer, in August 2013, more than a dozen class action lawsuits were filed against Goldman, Metro, the LME, and others, by aluminum purchasers claiming:

> "[D]efendants together arranged to stockpile aluminum in warehouses in the Midwestern portion of the United States and delayed load-outs of such aluminum, causing storage costs to increase. This led to an increase in the Midwest Premium, a price component that incorporates a number of inputs including storage costs. Plaintiffs allege that their purchases of aluminum are priced with reference to the Midwest Premium, and that they therefore paid inflated prices."[1249]

Triggering LME Investigation. Another development from the New York Times article was that, shortly after its publication, an LME examiner visited Metro and made a number of inquiries into Metro's practices. Several months later, on December 4, 2013, the LME notified Metro that the exchange had opened a formal investigation "into the circumstances surrounding the movement of primary aluminum between listed warehouses" operated by Metro in

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[1244] "A Shuffle of Aluminum, but to Banks, Pure Gold," New York Times, David Kocieniewski. http://www.nytimes.com/2013/07/21/business/a-shuffle-of-aluminum-but-to-banks-pure-gold.html?pagewanted=all&_r=1&.

[1245] Id. Concerns about Metro's lengthening queue and its effect on aluminum markets had begun years earlier. See, e.g., "Wall Street Gets Eyed in Metal Squeeze," Wall Street Journal, Tatyana Shumsky and Andrea Hotter (6/17/2011), http://online.wsj.com/articles/SB10001424052702304186404576389680225394642.

[1246] See "Examining Financial Holding Companies: Should Banks Control Power Plants, Warehouses, and Oil Refineries?" hearing before the U.S. Senate Banking Subcommittee on Financial Institutions and Consumer Protection, S. Hrg. 113-67 (7/23/2013), opening statement of Subcommittee Chairman Sherrod Brown, http://www.gpo.gov/fdsys/pkg/CHRG-113shrg82568/html/CHRG-113shrg82568.htm.

[1247] Id., prepared testimony of Tim Weiner, Global Risk Manager, Commodities/Metals, MillerCoors LLC, at 4.

[1248] "Goldman Sachs Offers Aluminum to Clients Stuck in Queue," Bloomberg, Michael J. Moore and Agnieszka Troszkiewicz (7/31/2013), http://www.bloomberg.com/news/2013-07-31/goldman-sachs-offers-aluminum-to-clients-stuck-in-queue.html.

[1249] See In Re Aluminum Warehousing Antitrust Litigation, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(court decision describing allegations; it dismissed the class action suits for lack of standing).

Detroit.[1250] A few days later, LME sent Metro a request for documents and information about Metro's cancellation practices, the inducements it offered to metal owners who participated in the merry-go-round transactions, and whether Metro considered those metal shipments consistent with its load-out obligations under LME rules.[1251] The LME also asked why Metro had not consulted the exchange about the practice before engaging in it.[1252]

On January 27, 2014, Metro responded to the LME's letter.[1253] The response drew upon information provided by a number of Metro and Goldman employees, including Jacques Gabillon, head of Goldman's GCPI group and Chairman of Metro's Board of Directors. Metro's response detailed the last Red Kite deal and the Glencore deal described above.[1254] As to the unusual movements of metal that resulted from the deals, Metro asserted that once the aluminum was loaded onto a truck, the owner of the metal was entitled to send it anywhere the owner wanted — including back to Metro. Metro wrote:

> "[Metro] considers metal that is loaded free on truck (FOT) at the owner's instruction, in accordance with the order of priority required by the LME … to count towards the operator's load-out obligations. At that point, the warehouse operator has released possession of the metal and thus has loaded-out the metal from its warehouse. The LME has long recognized the right of the metal owner to decide what to do with free metal, and, as the operator of LME-approved warehouses, Metro is bound to respect the owner's instruction."[1255]

Metro stated that, "consistent with LME requirements, Metro deducts metal from its inventory once a bill of lading has been signed by both Metro and the truck operator."[1256] Metro also wrote that LME's external auditors had reviewed Metro's operations pursuant to inventory audits in 2012, and "no material issues" were noted in the Audit Summary or any follow up.[1257]

On March 10, 2014, LME sent another letter to Metro, asking for details about Metro's vetting and approval process for the deals, and asking for new information, including whether Metro employees had "brokered" the merry-go-round deals identified in Metro's January letter, and whether Metro had considered asking LME "as to the appropriateness" of the deals.[1258] LME also asked whether "Metro consider[ed] that the incentives it offered contributed to the perpetuation of metal queues in Detroit."[1259]

On April 15, 2014, Metro replied to the LME's letter.[1260] Metro said that it was "unable to pinpoint which party first initiated the Transactions."[1261] As to whether the warehouse

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[1250] 12/4/2013 letter from LME to Metro, GSPSICOMMODS00046656 [sealed exhibit].
[1251] 12/6/2013 letter from LME to Metro, GSPSICOMMODS00046658 [sealed exhibit].
[1252] Id.
[1253] 1/27/2014 letter from Simmons & Simmons to LME, GSPSICOMMODS00046661.
[1254] Id. at Appendix A, GSPSICOMMODS00046666. The four previous merry-go-round deals were not within the time scope of the LME's document request.
[1255] 1/27/2014 letter from Simmons & Simmons to LME, GSPSICOMMODS00046661, 662.
[1256] Id.
[1257] Id.
[1258] 3/10/2013 letter from LME to Metro, GSPSICOMMODS00046827 - 833, at 828 [sealed exhibit].
[1259] Id. at 831.
[1260] 4/15/2012 letter from Simmons & Simmons to LME, GSPSICOMMODS00046834 - 849.

company had considered asking the LME its view of the deals, Metro stated that the company "regards its process for reviewing all transactions to be a matter of sound corporate practice and governance and therefore did not make enquiries to the LME regarding the [Red Kite and Glencore] Transactions." [1262] Metro also denied that the merry-go-round deals had contributed to the perpetuation of the queue stating that "Metro has no influence over warrant cancellations."[1263] Metro made that statement even after paying millions of dollars in incentives for warrant cancellations.

Metro also attempted to justify the incentives offered to Red Kite and Glencore, by explaining that it was "competing with other storage options available" to those companies.[1264] Metro also continued to assert that the deals were consistent with LME rules:

> "Metro does not consider the incentives it offered to be 'exceptional inducements' that 'artificially or otherwise constrained' the 'proper functioning of the market through the liquidity and elasticity of stocks of metal under warrant.' (Clause 9.3.1 of the Warehouse Agreement.)" [1265]

The Subcommittee is not aware of any correspondence between LME and Metro since Metro's April reply. The LME would not comment on the existence or status of the investigation.[1266]

The Subcommittee then asked the LME whether it would "consider it a violation of its load out rule for an owner of multiple warehouses to "load out" metal from one warehouse only to load it back in to another warehouse owned by the same company in the same geographic region." The LME told the Subcommittee that "while the LME would view such behavior as inconsistent with the "spirit" of the relevant requirements, it may not violate the "letter" of those requirements because the relevant terms may be susceptible to more than one interpretation."[1267] The LME has recently initiated a consultation on changes to its warehousing requirements to stop the practice.[1268]

(e) Benefiting from Proprietary Cancellations

In addition to the merry-go-round deals, four large proprietary cancellations by JPMorgan and Goldman also measurably lengthened the Detroit queue. The JPMorgan cancellations

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[1261] Id. at 837.
[1262] Id. at 838.
[1263] Id. at 844.
[1264] Id.. at 843.
[1265] Id. at 842.
[1266] The LME has consistently declined the Subcommittee's invitations to discuss the matter, citing the LME's role as a regulator. In particular, the LME stated that "as an instrumentality of the government of the United Kingdom and a market regulator, the LME maintains strict confidentiality of ongoing investigations into approved warehouses and therefore we are unable to provide further information. … The LME's confidentiality obligations stem from multiple sources." 11/10/2014 letter from LME to Subcommittee, LME_PSI0002459, at 461.
[1267] Id.
[1268] 11/7/2014 "Consultation and Proposed Amendments to the Policies and Procedures Relating to the LME's Physical Delivery Network," prepared by LME, https://www.lme.com/~/media/files/notices/2014/2014_11/14%20318%20a310%20w148%20physical%20network%20reform%20consultation%20notice.pdf.

involved about 200,000 metric tons of aluminum and took place in January and December 2012. The Goldman cancellations involved more than 300,000 metric tons of aluminum and took place in May and December 2012.

JPMorgan Cancellations. In January 2012, JPMorgan cancelled warrants for nearly 100,000 metric tons of aluminum held at Metro in Detroit. JPMorgan told the Subcommittee that the aluminum belonged to JPMorgan Chase Bank, which was not acting as an agent for any client but was acting on its own behalf, and that the purpose of the cancellation was, in part, to replenish its readily available stocks of aluminum.[1269] At the beginning of January 2012, the Detroit queue was approximately 115 days. By January 20, after JPMorgan had cancelled its warrants for 100,000 metric tons, the queue had increased to 216 days.[1270] A significant portion of that increase was attributable to JPMorgan's cancellation. According to JPMorgan, after waiting about nine months to get through the queue, the majority of the aluminum was shipped out of the Metro warehouse and into a Henry Bath LME-approved warehouse in Baltimore.[1271]

Nearly a year later, in December 2012, JPMorgan cancelled warrants for another approximately 95,000 metric tons of aluminum. The bank told the Subcommittee that it was the direct owner of the aluminum, it was not acting on behalf of a client, and the purpose of the cancellation was to use the aluminum in various future transactions.[1272] In mid-December 2012, prior to the cancellation, the queue in Detroit was less than 350 days. By the end of that month the wait for aluminum approached 500 days, with the increase appearing to be largely attributable to warrant cancellations by JPMorgan, Red Kite, and Goldman.[1273] JPMorgan waited in the queue for more than one year. In early 2014, the metal was shipped out of the Metro warehouses.[1274] According to JPMorgan, some of the aluminum was ultimately sold to clients and the remainder was shipped to other warehouses.[1275]

Goldman Cancellations. In 2012, the same year as the JPMorgan cancellations, Goldman engaged in two large acquisitions of aluminum warrants followed by cancellations of many of those warrants. The cancellations involved more than 300,000 tons of aluminum worth hundreds of millions of dollars.

Goldman told the Subcommittee that, in 2012, it began to focus on building trading relationships with aluminum consumers and set out to increase its physical holdings of aluminum

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[1269] Subcommittee briefing by JPMorgan (9/5/2014).
[1270] See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.
[1271] Subcommittee briefing by JPMorgan (9/5/2014). At the time, JPMorgan owned the Henry Bath warehouses. In March 2014, JPMorgan reached an agreement to sell its physical commodities business to Mercuria Energy Group, including the Henry Bath warehousing business. See Subcommittee briefing by JPMorgan (9/5/2014); 3/19/2014 JPMorgan press release. "J.P. Morgan announces sale of its physical commodities business to Mercuria Energy Group Limited," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1394963095027&c=JPM_Content_C.
[1272] Subcommittee briefing by JPMorgan (9/5/2014).
[1273] See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.
[1274] Subcommittee briefing by JPMorgan (9/5/2014).
[1275] Id.

to do business with those clients.[1276] Goldman told the Subcommittee that it had determined that purchasing aluminum warrants on the LME was the most cost-effective way to build its physical inventory and set out to buy readily available aluminum, meaning aluminum that was not in a warehouse with a queue, such as Metro.[1277]

According to Goldman records, in March 2012, it held about 277,000 metric tons of aluminum.[1278] Goldman told the Subcommittee that it entered into a large number of LME futures contracts with warrants for delivery of aluminum in April 2012.[1279] At the same time, the company sold futures contracts to deliver LME aluminum warrants in May and June.[1280] At the time, the vast majority of warrants used to settle LME aluminum trades were associated with aluminum held in either Detroit or Vlissingen. Since those warrants were associated with aluminum held in warehouses with long queues, they were the least valuable and the most likely to be used to settle futures trades.[1281] According to Goldman, its goal was to buy so many LME warrants for April delivery that at least some of those warrants would be for aluminum held in warehouses without queues.[1282]

Goldman executed the trades in April 2012, which increased its physical aluminum holdings that month to nearly 780,000 tons of aluminum with a market value of more than $1.6 billion.[1283] According to Goldman, however, the effort to secure warrants in warehouses without queues was unsuccessful, and the company used many of the warrants it had bought to meet its May and June trading commitments.[1284]

On May 15, 2012, in the midst of that series of trades, Goldman cancelled warrants associated with almost 50,000 metric tons of physical aluminum in Metro's Detroit warehouses. In mid-July 2012, Goldman cancelled warrants for another 45,000 metric tons in Detroit, for a combined total of 95,000 metric tons.[1285] Prior to Goldman's first set of cancellations, in mid-

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[1276] Subcommittee briefing by Goldman (7/16/2014).

[1277] Id. Finding warrants for aluminum at warehouses without queues was difficult since the two warehouses with the vast majority of LME warranted aluminum were the Metro warehouses in Detroit and the Pacorini warehouses in Vlissingen, both of which had long queues for removal of metal. A later public report issued by the LME in November 2013, noted the problem, observing that, of the aluminum warrants used to settle trades on September 18, 2013, for example, 99% were associated with aluminum in a warehouse with a queue. See 11/2013 "Summary Public Report of the LME Warehousing Consultation," prepared by LME, https://www.lme.com/~/media/Files/Warehousing/Warehouse%20consultation/Public%20Report%20of%20the%20LME%20Warehousing%20Consultation.pdf.

[1278] 2/20/2013 letter from Goldman legal counsel to Subcommittee, at chart, GSPSICOMMODS00000002-R.

[1279] Subcommittee briefing by Goldman (7/16/2014).

[1280] Id.

[1281] Id.; Subcommittee interview of Gregory Agran (10/10/2014).

[1282] Id.; See 8/8/2014 letter from Goldman to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007; Subcommittee briefing by Goldman (7/16/2014).

[1283] 2/20/2013 letter from Goldman legal counsel to Subcommittee, at chart, GSPSICOMMODS00000002-R.

[1284] 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 -011, at 007; Subcommittee interview of Gregory Agran (10/10/2014).

[1285] 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit C, at 011.

May 2102, the queue in Detroit was about 285 days.[1286] By mid-July 2012, after the last of Goldman's cancellations, it had increased by nearly a third to around 370 days.[1287]

A few months later, in December 2012, driven by what Goldman called a "longer-term strategy to developing our consumer franchise business," the company again set out to significantly increase its holdings of physical aluminum.[1288] According to Goldman, discussions with aluminum consuming clients had identified "interest in having Goldman Sachs serve as a source of supply for metal in the future and as a counterparty on forward-starting hedge transactions."[1289]

Goldman told the Subcommittee that, despite its failure to obtain any significant number of warrants outside of Detroit and Vlissingen during the prior spring, it decided to try the same strategy again – buying such a large volume of LME warrants that at least some would likely come from warehouses without queues.[1290] Goldman ultimately purchased LME futures contracts for December delivery with warrants for more than 1 million tons aluminum, a huge amount. At the same time, the company sold a large number of futures contracts for January 2013.[1291]

In the midst of that series of trades, Goldman's physical aluminum holdings grew to more than 1.5 million metric tons of aluminum worth more than $3.2 billion, nearly five times the amount held just weeks earlier. As with the first attempt, however, Goldman obtained few warrants for aluminum in a warehouse without a queue. According to Goldman, it then used about half of the LME warrants to settle its short January contracts. Even after that, at the end of January 2013, Goldman held nearly 825,000 metric tons of aluminum worth more than $1.76 billion.[1292]

Goldman said that the LME warrants that were not used to settle the January contracts were then cancelled, which significantly increased the queue in Metro's Detroit warehouses as well as the queue in the Pacorini warehouses located in Vlissingen, Netherlands where much of the warranted aluminum was located.[1293] Over just three days in mid-December 2012, Goldman cancelled warrants for more than 227,000 metric tons of aluminum in Detroit.[1294]

Why Goldman thought that the second aluminum trade would succeed when the first failed is unclear, but what is clear is that, for a second time, Goldman's cancellations lengthened

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[1286] See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses, prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.
[1287] Id.
[1288] 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007.
[1289] Id.
[1290] Id.
[1291] Id.
[1292] 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit D, at 013.
[1293] 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 007.
[1294] 4/30/2014 letter from Goldman legal counsel to Subcommittee, "April 2, 2014 Email," PSI-GoldmanSachs-09-000001 - 013, Exhibit C, at 011.

the Metro Detroit queue. In mid-December 2012, prior to Goldman's cancelling the warrants, the queue in Detroit was just under 350 days.[1295] By the end of December 2012, the wait to get aluminum out of the Metro warehouse system was approaching 500 days, with the increase largely attributable to warrant cancellations by JPMorgan, Red Kite, and Goldman.[1296]

As explained earlier, longer queues in Detroit were highly correlated with higher Midwest Premiums.[1297] According to Goldman, longer queues and higher Midwest Premiums would directly impact LME prices.[1298] At the same time Goldman was cancelling its warrants, it was actively trading financial products tied to the price of aluminum, including the LME price.

(f) Benefiting from Fees Tied to Higher Midwest Premium Prices

Under Goldman's ownership, Metro entered into a series of transactions that enabled it to benefit financially from the rising Midwest Premium, which was highly correlated to its own lengthening queue in Detroit.

As explained above, the Midwest Premium is a key price component in U.S. aluminum contracts that, along with the LME price, produces the all-in price for physical aluminum. The premium is intended to reflect, among other factors, storage costs for aluminum. While the Midwest Premium used to be an inconsequential part of the all-in price, about 4%; over the last five years, it has increased substantially, and, since January 2014, has been more than 20% of the all-in price. As shown in a graph earlier, between 2010 and 2014, the increases in the Midwest Premium have had an extremely high correlation of 0.89 with increases in the length of the Metro Detroit queue.[1299] In other words, when the queue lengthened, the Midwest premium almost always increased.

In response to Subcommittee questions, Goldman disclosed that, from 2010 through 2014, in at least 13 arrangements, Metro received payments from some warehouse clients of amounts that were directly or indirectly tied to the Midwest Premium price.[1300] Agreements that potentially link Metro revenues to the Midwest Premium raise conflict of interest concerns, since

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[1295] See undated "Harbor's Estimated Aluminum Load-Out Waiting Time in LME Detroit Warehouses," prepared by Harbor Aluminum, PSI-HarborAlum-01-000001.

[1296] Id.

[1297] For another explanation of the correlation between the queue and the Midwest Premium price, see In Re Aluminum Warehousing Antitrust Litigation, 2014 U.S. Dist. LEXIS 121435 (USDC SDNY)(8/29/2014)(court decision summarizing the position taken by aluminum buyers: "LME stored aluminum in the Detroit area determines the level of the Midwest Premium. As trader rather than user dynamics took root in the LME warehouses, the level of the Premium became driven by trading dynamics rather than actual supply and demand of aluminum users. … A direct result of this was to increase storage duration, thus storage costs, thereby increasing the Midwest Premium.").

[1298] Goldman has strenuously argued, however, that queues simply impact the LME price in relation to the physical price. Put another way, in Goldman's opinion, as the queue gets longer, the Midwest Premium gets higher and the LME price falls, yet the "all in price" remains the same. See "The economic role of a warehouse exchange," Goldman Sachs (10/31/2013), GSPSICOMMODS00047511 - 545, at 513.

[1299] See chart entitled, "Detroit Queue and Platts MW Aluminum Premium," above.

[1300] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001 - 010, at 002 and Appendix A, GSPSICOMMODS00046531; and 10/3/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-27-000001 and attachment, GSPSICOMMODS00046630.

a Metro financial interest in the premium price would create an incentive for the company to develop and maintain longer queues.

Each month since Goldman acquired Metro, Goldman's Global Commodities Principal Investing (GCPI) group produced a one-page management brief for Isabelle Ealet, who was Global Head of GS Commodities until she was promoted to co-head of the Securities Division in 2012.[1301] The Metro management briefs included such information as Metro's gross year-over-year profit, inventory projections, and business highlights.[1302] The June 2011 management brief stated that "Metro showed another month of record financial performance," and highlighted "Extraordinary income from counterparties sharing physical premium with Metro after delivering metal previously under financing deals into the physical market."[1303] Ms. Ealet told the Subcommittee that she did not recall that briefing document and could not explain how Metro's counterparties were "sharing physical premium with Metro."[1304]

Goldman told the Subcommittee that the "premium sharing" payments referenced in the brief and other payments like it were "a means of compensating Metro for, among other things, rent discounts Metro provided based on the understanding that the customer would hold metal for a period that is longer than the period for which the customer ultimately held the metal in Metro's warehouses."[1305]

Goldman identified 29 agreements between 2010 and 2014 in which a customer paid Metro a "break fee" for selling physical aluminum that was held at a Metro warehouse under a discount rent agreement.[1306] Thirteen of those 29 agreements were associated with the sale of metal stored in Metro warehouses in the United States.[1307] The Midwest Premium was the applicable premium in those sales. It appears that Metro earned more than $7.3 million in break fees from those 13 agreements.[1308]

Metro CEO Christopher Wibbelman told the Subcommittee that Metro got a better deal out of the break fees than it would have if Metro had simply continued with the discount rent agreements.[1309] The amounts were also sufficiently large that they were brought to the attention of the head of Goldman's Commodities division and described as "Extraordinary income" in "another month of record financial performance."[1310] The premium sharing arrangements gave

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[1301] Subcommittee interview of Jacques Gabillon (10/14/2014).
[1302] See, e.g., 6/2011 "Metro International Trade Services Management Brief," prepared by Metro and Goldman, GSPSICOMMODS00009668.
[1303] Id.
[1304] Subcommittee interview with Isabelle Ealet (10/14/2014).
[1305] 10/2/2014 letter from Goldman legal counsel to Subcommittee, PSI-GoldmanSachs-21-000001, at 002.
[1306] Id. The "break fee" refers to a fee paid by the client for breaking the agreement with Metro to keep its metal in a Metro warehouse for a specified period of time. Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1307] Id. 10/2/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-21-000001, at 002, and attachment,GSPSICOMMODS00046531; 10/3/2014 letter from Goldman legal counsel to the Subcommittee, PSI-GoldmanSachs-27-000001, and attachment, GSPSICOMMODS00046630.
[1308] Id.
[1309] Subcommittee interview with Christopher Wibbelman (10/6/2014).
[1310] 6/2011 "Metro International Trade Services Management Brief," prepared by Metro and Goldman, GSPSICOMMODS00009668.

Metro another financial reward for longer queues,[1311] since longer queues were highly correlated with higher Midwest Premium prices – higher prices that produced additional income for Metro through the premium sharing agreements.

(g) Sharing Non-Public Information

A second set of issues involves the extent to which Metro shared commercially valuable, non-public information with Goldman employees who were involved in commodities and trading in the aluminum markets.

Background on Information Sharing. In the regular course of business, LME-approved warehouses acquire information on warehouse metal stocks, current and future metal shipments, LME warrant cancellations, and warehouse queue lengths that is not available generally to market participants. The LME has recognized that traders privy to such warehouse information before it becomes available to the broader market could use that non-public information to benefit their trading strategies, gaining an unfair advantage over the rest of the market and their own counterparties. To prevent inappropriate sharing or the misuse of market sensitive information, the LME has required warehouse companies who are affiliated with trading companies to set up information barriers between the two.

The LME requirements relating to erecting so-called "Chinese walls" between the warehouse and trading operations state that "it is essential that personnel engaged in trading activities in relation to the LME market do not come into possession of any Confidential Information" from the warehouse, including warehouse stock figures, proposed or actual metal shipments to or from an LME warehouse, and information relating to the issuance and cancellation of LME warrants.[1312] The requirements state that such confidential information may be provided only to certain "Designated Individuals" and that the number of such individuals at affiliated trading companies should be "kept to a minimum."[1313] Under LME requirements, information shared with a trading company "will be confined to common directors and others who have management responsibility for both entities."[1314]

Prior to its purchase of Metro, Goldman identified the "perception of misuse of confidential [Metro] information" as a key investment risk.[1315] To address that risk, Goldman issued a policy to ensure compliance with LME information sharing requirements, warning:

> "It is strictly prohibited for Metro to disclose any information about pending metal deposits or withdrawals or to give any specific information relating to storage terms, client deals or financing transactions to individuals within [Commodities Sales and

[1311] Of course, the principal reward was the ability to charge additional rent to those who may want to exit Metro's Detroit warehouses, but were blocked by the queue.
[1312] 11/17/2011 "Information Barriers Between Warehouse Companies and Trading Companies," prepared by LME, at 1-3 (hereinafter, "LME Information Barrier Rules."), https://www.lme.com/~/media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.
[1313] Id. at 4.
[1314] Id.
[1315] See 8/6/2013 "Federal Reserve Bank of New York Reputational Risk Questions MITSI Holdings LLC," prepared by Goldman, FRB-PSI-700124 - 150, at 130.

> Trading or any other Goldman personnel not approved to receive information]. It is also prohibited for Metro staff to share any information which is reported to or published by the LME ahead of publication to the market."[1316]

Despite that Goldman policy, and a corresponding one at Metro, the Subcommittee found that confidential Metro information was made available to dozens of Goldman employees, including personnel active in trading commodities.

Metro Executives. Metro's CEO, COO, and Chairman of the Board all told the Subcommittee that they viewed Metro's and Goldman's information barrier policies as prohibiting them from sharing specific Metro-related information with Goldman aluminum traders or others involved in trading aluminum.[1317]

Beginning in April 2012, the LME began mandating that warehouse companies affiliated with a trading company engage a third party to ensure that their policies and procedures complied with the exchange's information barrier requirements.[1318] Metro hired PricewaterhouseCoopers (PwC) to conduct its 2012 and 2013 reviews.

According to Goldman, the PwC reviews took place over several weeks in which the auditor independently tested and verified each of the controls put in place by Metro to protect against inappropriate sharing of confidential warehouse information. Both PwC reviews concluded that Metro's assertions that its information barriers were in compliance with LME requirements were "fairly stated, in all material aspects."[1319] PwC's assessments, however, were limited to reviewing Metro's information barriers, since the LME requirement applies only to warehouse companies and not to their affiliated trading companies. PwC did not undertake a similar review of Goldman.

Goldman Access to Metro Information. For its part, Goldman told the Subcommittee that internal audits of Goldman's information barriers have not identified problems. While a significant number of Goldman employees are authorized under Metro's and Goldman's policies to receive confidential information from Metro, Goldman advised the Subcommittee that "Compliance has found no unauthorized instances where Metro confidential information was transmitted to Goldman Sachs sales and trading personnel."[1320]

Goldman's information barriers policy identifies three categories of "Designated Individuals" who are permitted access to certain confidential Metro information. One group

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[1316] 3/26/2014 "Information Barrier Policy: Metro and Other GS Business and Personnel," prepared by Goldman, GSPSICOMMODS00004059 - 076, at 066.

[1317] Subcommittee interviews of Christopher Wibbelman (10/6/2014), Leo Prichard (10/6/2014), and Jacques Gabillon (10/14/2014).

[1318] 11/17/2011 "Information Barriers Between Warehouse Companies and Trading Companies," prepared by LME, at 6-7, https://www.lme.com/~/media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.

[1319] 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001-011, at 005.

[1320] See 8/6/2013 "Federal Reserve Bank of New York Reputational Risk Questions MITSI Holdings LLC," prepared by Goldman, FRB-PSI-700124-150, at 133; 8/8/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-Goldman-11-000001 - 011, at 010.

consists of certain employees in Goldman's Global Commodities Principal Investing (GCPI) group. A second group is made up of Goldman employees who sit on Metro's Board of Directors. A third group includes certain senior managers in Goldman's Securities Division.[1321]

Global Commodities Principal Investments. As mentioned above, GCPI is the group within Goldman's Global Commodities group that makes equity investments in commodities-related businesses like power plants and coal mines, and it was GCPI personnel who conducted the analysis and strategy that led to Goldman's purchase of Metro.[1322]

Ten Goldman employees assigned to GCPI have been authorized to receive monthly data packages from Metro containing warehouse related confidential information.[1323] GCPI data packages include information on Metro stock levels, warrant cancellations, deal-specific freight incentives, rent discounts, and future metal flows, the latter of which is referred to as Metro's "deal pipeline." For example, for the month ending November 2012, the GCPI data packet showed more than 550,000 tons of metal under contract for delivery to Metro's Detroit warehouse. Of that amount, the data packet indicated that only about 110,000 metric tons had been warranted and that 74,000 metric tons of metal already in the warehouse was awaiting warranting, the latter figure being particularly sensitive market information because it was not reflected in public stock reports.[1324]

Goldman told the Subcommittee that its GCPI personnel requires detailed non-public information from Metro on a monthly basis to conduct business planning, estimate cash flows, and support Metro. Information on Metro's "deal pipeline," meaning metal that is under contract for delivery to Metro warehouses, is information not included in the LME's public warehouse stock reports until the metal was delivered and warranted. It is important to prevent such information from being shared with traders as it could give a trading company an advantage by, for example, allowing it to better predict spreads between cash and futures aluminum prices. Such insight could not only inform a firm's trading strategy but would allow it to assess risks associated with particular trades.[1325]

Goldman Employees on Metro Board. A second group of persons designated to receive confidential Metro information are the Goldman employees who sit on the Metro Board. Following its purchase of Metro, Goldman installed a new Board of Directors consisting exclusively of Goldman employees, more than half of whom were from the Global Commodities group. Board Members included individuals associated with commodity trading, commodity operations, and GCPI. One Board Member ran Goldman's Natural Gas and Power Trading

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[1321] 3/26/2014 "Information Barrier Policy: Metro and Other GS Business and Personnel," prepared by Goldman, GSPSICOMMODS00004059 - 076, at 060, 066.
[1322] Subcommittee briefing by Goldman Sachs (7/16/2014).
[1323] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001-009, at Exhibit A, GSPSICOMMODS00046225.
[1324] 12/1/2012 MITSI Holdings, LLC, GCPI data packet, prepared by Metro and Goldman, GSPSICOMMODS00040203, at 205; 2/19/2010 "Conflict Management Procedures Between Metro and Other GS Businesses and Personnel," prepared by Metro and Goldman, FRB-PSI-602457 - 471, at 458.
[1325] Subcommittee briefing by Jorge Vazquez (9/30/2014).

group and was head of GCPI during his time on the Board.[1326] While the composition of the Board has varied since 2010, it has always been wholly comprised of Goldman employees, many from Goldman's Global Commodities group.[1327] Metro supplies each Board member with information packets which are produced and distributed on a quarterly basis.[1328]

Goldman has said that the format of the Board packets "ensures that no market sensitive non public information is disclosed."[1329] While less detailed than the data packets provided to GCPI employees, the Board packets have included substantial information about future expected metal flows and stock levels. For example, the packet produced for an October 2012 Board meeting described the "Current Deal Pipeline"[1330] for metal to be delivered to Metro warehouses, indicated "Metro has another 277 [thousand metric tons] booked," and "Detroit continues to be the key inbound location for Metro."[1331]

In another example, information provided to the Board in June 2013, showed more than 576,000 tons of metal, including 400,000 tons of aluminum, in Metro's deal pipeline at the end of May 2013. The Board packet also stated that Detroit "continues to be the key inbound location for Metro with another 431 [thousand metric tons] of metal expected."[1332]

Again, experts told the Subcommittee that information on existing and upcoming aluminum flows could be commercially valuable to a trading company by providing insight into market direction, helping with predictions of future spreads, and informing the strategic direction for its trading activities.[1333]

Senior Goldman Managers. The third and final group of Goldman employees designated to receive confidential Metro information work for the Goldman Securities Division. The Securities Division at Goldman oversees the Global Commodities group, including Commodity Sales, Commodity Trading, and GCPI. Isabelle Ealet is the current co-head of the Securities Division and is responsible for the Division's commodity-related business. Prior to

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[1326] See 12/5/2011 MITSI Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009287 - 309, at 290; 3/2010 MITSI Board Meeting, prepared by Metro and Goldman , GSPSICOMMODS00009519 - 542, at 534 (Gregory Agran left Metro's Board of Directors at the end of 2011).

[1327] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001 - 009, at Exhibit A, GSPSICOMMODS00046225. See also chart listing Metro Board members, above.

[1328] 8/8/2014 letter from Goldman legal counsel to Subcommittee, PSI-Goldman-11-000001 - 011, at 009.

[1329] 3/26/2014 "Information Barrier Policy: Metro and Other GS Business and Personnel," prepared by Goldman, GSPSICOMMODS00004059 - 076, at 063.

[1330] 3/2010 MITSI Board Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009519 - 542, at 535 ("Metro's deal book pipeline consists of a series of committed deals based on verbal agreements with market counterparties").

[1331] 10/4/2012 MITSI Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009398 - 422, at 409.

[1332] 6/19/2013 MITSI Holdings LLC Board of Directors Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009378 - 397, at 387.

[1333] Subcommittee briefing by Jorge Vazquez (9/30/2014).

being named to that position in January 2012, Ms. Ealet was global head of the Commodities group.[1334]

Beginning in March 2010, Ms. Ealet began receiving monthly reports, called a "management brief," that provided her with confidential Metro information, including information about future metal flows in Metro's deal pipeline.[1335] For example, a September 2010 brief discussed an off-warrant deal reached for 100,000 metric tons of aluminum at Metro and included a graph projecting Metro stock balances.[1336] Similarly, a November 2011 brief stated that Metro expected to put in excess of 100,000 metric tons on warrant the following month.[1337] Subsequent briefs discussed future metal flows, referring to "strong 2013 pipeline," and metal outflows "offset by a strong pipeline and inflows."[1338]

LME's information barrier requirements state "it is essential that personnel engaged in trading activities in relation to the LME market do not come into possession of any Confidential Information"[1339] The LME has told the Subcommittee, however, that "personnel engaged in trading activities" as discussed in its requirements would not necessarily include executives, such as Ms. Ealet, even though they supervised trading activities.[1340] According to the exchange, whether or not the prohibition on access to confidential information applied would depend on the extent of the supervisor's involvement in setting trading strategy.[1341] Ms. Ealet told the Subcommittee that while she was not typically involved in the day-to-day management of trading, she may become involved in specific trades or issues from time to time.[1342]

Other Goldman Employees. At the Subcommittee's request, Goldman identified more than 30 additional Goldman employees, other than the groups already discussed, who, since 2010, have been provided access to confidential Metro information.[1343] They include individuals working in the bank's Market Risk Management & Analysis, tax, litigation, accounting, audit, compliance, derivatives, and commodities departments.[1344]

[1334] "2 Securities Heads Are Latest to Leave Goldman," New York Times. Susanne Craig (1/11/2012). http://dealbook.nytimes.com/2012/01/11/global-securities-co-heads-to-leave-goldman/?_php=true&_type=blogs&_r=0.

[1335] Subcommittee interview of Isabelle Ealet (10/14/2014).

[1336] 9/2010 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009675.

[1337] 11/2011 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009670.

[1338] 4/2013 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009664; 9/2013 "Metro International Trade Services Management Brief," prepared by Goldman, GSPSICOMMODS00009690.

[1339] 11/17/2011 "Information Barriers Between Warehouse Companies and Trading Companies," prepared by LME, at 1-3. https://www.lme.com/~/media/Files/Notices/2011/2011_11/11_334_A326_W173_Information_Barriers_Between_Warehouse_Companies_and_Trading_Companies.pdf.

[1340] Subcommittee briefing by LME (8/1/2014).

[1341] Id.

[1342] Subcommittee interview of Isabelle Ealet (10/14/2014).

[1343] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-17-000001-009, at Exhibit A, GSPSICOMMODS00046226.

[1344] Id.

The Subcommittee interviewed, among others, Gregory Agran, who formerly headed GCPI and is now the Global co-head of Commodities for Goldman; Jacques Gabillon, the current head of GCPI and Chairman of Metro's Board of Directors; and Isabelle Ealet, former Global Head of Commodities and current co-head of Goldman's Securities Division. Ms. Ealet and Mr. Agran told the Subcommittee that they could not recall any instance in the past five years in which any commercially sensitive warehouse information had been shared in violation of the Goldman information-sharing policy. Nor could either recall any occasion on which a concern was raised that the information barriers policy had been violated.[1345]

Mr. Gabillon recalled one information-sharing related incident that had been registered by Michael Whelan, a senior Metro executive, who brought that matter to Mr. Gabillon's attention in 2013.[1346] According to Mr. Gabillon, the incident involved a Goldman commodities trader who came to him and expressed unhappiness with a zinc-related transaction involving Metro in New Orleans.[1347] Mr. Gabillon said the interaction was unusual as it was the only occasion he could recall in which a trader approached him directly about a Metro-related issue. Mr. Gabillon said that he told the trader to take the complaint to his own reporting chain. Mr. Gabillon also said that he reported the incident to compliance.[1348]

However, according to Christopher Wibbelman, another senior executive at Metro, Michael Whelan, the company's Vice President of Business Development, had registered a concern about an interaction between a Goldman trader and Mr. Gabillon.[1349] The incident was apparently the same as that referred to by Mr. Gabillon and discussed above. A June 2013 email from Mr. Whelan to Mr. Wibbelman, apparently referring to the interaction, stated that Mr. Whelan was resigning from the company and identified concerns with Metro's "Chinese Wall" policy. Mr. Whelan wrote:

> "I have some questions and concerns regarding the Chinese Wall Policy that is in place which regulates the interaction between Metro International, its customers, and J. Aron [Goldman's primary commodities trading subsidiary]. This morning's confrontation was extremely questionable."[1350]

Mr. Wibbelman told the Subcommittee he could not recall the details of the "confrontation" referred to in the 2013 email.[1351]

Goldman told the Subcommittee that the bank's compliance department subsequently determined that no breach of the LME information barriers policy had occurred with respect to the incident, but declined to provide any documentation.[1352] Metro's CEO, Christopher Wibbelman, told the Subcommittee that he believed that Goldman came to that conclusion, in

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[1345] Subcommittee interviews of Isabelle Ealet (10/14/2014) and Gregory Agran (10/14/2014).
[1346] Subcommittee interview of Jacques Gabillon (10/14/2014).
[1347] Id.
[1348] Id.
[1349] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1350] 6/14/2013 email from Michael Whelan to Christopher Wibbelman, "Resignation," GSPSICOMMODS00047430.
[1351] Subcommittee interviews of Christopher Wibbelman (10/6/2014).
[1352] 10/20/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-20-000001 - 041, at 002 - 003.

part, because the LME Chinese Wall policy covers only information that could flow from the warehouse company to Goldman.[1353] Goldman told the Subcommittee that the compliance review involved its Legal Department, and asserted and declined to waive attorney-client privilege in refusing to provide documents related to that review.[1354]

All told, nearly 50 Goldman employees, including Commodities executives and traders, have had access to confidential Metro information, including information that could be commercially valuable to a trading company.[1355]

(h) Current Status

Current relations between Goldman and Metro appear to be strained. In addition, in mid-2014, Goldman announced it was "exploring" a possible sale of the warehouse business.

Strained Relations. Prior to its acquisition by Goldman, Metro had built a robust warehousing business. Its senior executives, including Christopher Wibbelman, Mark Askew, and Michael Whelan, had each been with the company for more than a decade, and had been intimately involved in its economic well-being.[1356]

After being acquired by Goldman, Metro's executives were required to obtain approval for a large swath of Metro's business activities, including each of the merry-go-round deals described above.[1357] According to Metro CEO Christopher Wibbelman, Metro employees found it, at times, "demanding" to work for Goldman.[1358] He indicated, for example, that Goldman traders sometimes pressured Metro employees to provide free or discounted rent when storing metal in the warehouses that Metro found not commercially viable.[1359]

Mr. Wibbelman told the Subcommittee that he "never rolled over" to Goldman, and that Metro was repeatedly told by its Chairman of the Board, Jacques Gabillon, that Metro should always act in the best interests of Metro.[1360]

Nevertheless, according to Mr. Wibbelman, at one point, there was what Mr. Wibbelman called a "falling out" between Metro and Goldman.[1361] The contours of that dispute remain unclear, with some evidence suggesting that it involved Goldman's decision to not store zinc in Metro after receiving an incentive from Metro to store it there.[1362] The dispute was ultimately raised to Metro's Chairman of the Board, Jacques Gabillon, and Isabelle Ealet, for resolution.

[1353] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1354] 10/20/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-20-000001 - 041, at 002 - 003.
[1355] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-Goldman Sachs-17-000001 - 005, at 002, and Exhibits A and B, PSI-GoldmanSachs-17-000007, 009 (also listed as GSPSICOMMODS00046225 - 226).
[1356] Subcommittee interview of Christopher Wibbelman (10/6/2014).
[1357] Id.
[1358] Id.
[1359] Id.
[1360] Id.
[1361] Id.
[1362] Id.

Mr. Wibbelman told the Subcommittee that the matter was resolved, but relations remained strained. He said that, unlike his former marketing staff, he had not spoken with Goldman's traders about sales issues in perhaps eight or nine months.[1363]

Resignations and Departures. One of the complicating factors in determining what happened at Metro is the significant turnover in personnel. Since the end of 2012, key personnel have left both Metro and Goldman. In February 2013, Mark Askew, Metro's Vice President for Marketing resigned after repeatedly raising concerns with Metro's "queue management."[1364] Shortly thereafter, despite a recent promotion, Michael Whelan, another senior Metro executive, resigned, citing concerns with Metro's "Chinese Wall Policy" in his resignation email.[1365] The senior aluminum trader at Goldman, who was hired after a referral by Mr. Wibbelman, also resigned.[1366] Lastly, a Goldman compliance executive who served on Metro's Board of Directors also left at about that time to take a new job.[1367]

In May 2014, a Goldman spokesman stated publicly that Goldman was "exploring a sale" of its warehousing business, but as of November 2014, Goldman still owns it.[1368]

(3) Issues Raised by Goldman's Involvement with Aluminum

Perhaps the most striking aspect of Goldman's foray into physical aluminum and the metals warehouse business is the extent to which, within three years, its actions significantly impacted U.S. aluminum markets. Goldman's ownership of Metro, Metro's rise to dominance in the U.S. LME aluminum storage business, and the long queues to remove metal from Metro have generated LME rule changes, Senate hearings, a New York Times expose, class action litigation, and ongoing allegations by industrial aluminum users that Metro's and Goldman's actions have increased aluminum prices and disrupted the aluminum market as a whole. Concerns include conflicts of interest, access to commercially valuable non-public information, and unfair trading advantages.

(a) Conflicts of Interest

The facts discovered by the Subcommittee raise at least four different types of conflict of interest issues, involving the merry-go-round trades, proprietary metal cancellations, premium sharing, and Goldman's authority over Metro operations.

Merry-Go-Round Transactions. The merry-go-round trades created multiple conflicts of interest for Metro and its owner, Goldman. Those warehouse clients were asked to get into or stay in the warehouse queue to load out their metal. Cancellations of their warrants, which

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[1363] Id.
[1364] 12/4/2010 email from Mark Askew, Metro, to Christopher Wibbelman, Metro, GSPSICOMMODS00047422.
[1365] 6/14/2013 email from Michael Whelan to Christopher Wibbelman, "Resignation," GSPSICOMMODS00047430.
[1366] "Goldman Sachs heads of metals to retire," Financial Times, Jack Farchy (10/11/2012), http://www.ft.com/intl/cms/s/0/497280ba-13d0-11e2-8260-00144feabdc0.html#axzz3li1Mkdjk.
[1367] This compliance staffer joined a Geneva-based commodities trading firm.
[1368] See, e.g., "Goldman Puts Metals Warehouse Business Up For Sale," Wall Street Journal, Tatyana Shumsky and Christian Berthelsen (5/20/2014), http://online.wsj.com/articles/SB10001424052702303468704579574283591643044.

typically involved 100,000 or more metric tons of aluminum, significantly increased the length of the Metro Detroit queue. The longer queue was highly correlated with higher Midwest Premium prices, since that premium reflects, in part, metal storage costs, and longer queues meant increased rental payments. Higher Midwest Premiums, according to most experts with whom the Subcommittee spoke, also meant higher aluminum prices. Lengthening the queue, then – "queue management" – could be seen as, not only producing more rental income for Metro, but also higher prices for the aluminum held or being traded by Goldman.

When a metal owner involved with a merry-go-round trade got to the head of the warehouse queue, it often took weeks or months to load out its metal, essentially blocking the exits for all other metal owners until it was done. At the end of the process, the metal owner in the merry-go-round transaction re-loaded its metal into another Metro warehouse, and in the overwhelming number of cases, re-warranted the metal. The end result was that the delays imposed on the other metal owners in the Metro system appear to have had little economic rationale, but increased revenues to Metro and its owner, Goldman. The merry-go-round trades also involved an element of deception, since the metal being loaded "out" did not actually leave the Metro system at all, but went from one Metro warehouse to another.[1369] The LME is still considering whether such in-system transfers meet its minimum load-out requirement.

The evidence indicates that Goldman personnel, through the Metro Board of Directors and otherwise, reviewed and approved the merry-go-round deals. That meant senior Goldman personnel knew of the deals ahead of time, including the size, nature, and, in some instances, the timing of the cancellations. Goldman personnel acquired that information during the same period that Goldman itself was accumulating physical aluminum and engaging in substantial aluminum-related transactions.

In the end, the merry-go-round trades resulted in some clients receiving surreptitious financial incentives for leaving their metal within the Metro warehouse system while, at the same time, making it harder for other warehouse clients to exit. The deals resulted in more rent for Metro, offered trading opportunities for Goldman, and had the effect of distorting the aluminum market.

Other Warehouse Transactions. Other Metro warehouse transactions also raised conflict of interest concerns. Like the merry-go-round transactions, the large proprietary aluminum cancellations by Goldman and JPMorgan added to the Metro Detroit queues, were correlated with increases in the Midwest Premium price, and blocked the exits for other metal holders seeking to withdraw metal from the Metro system. Because longer queues also contributed to increased Metro rental income, Goldman's proprietary cancellations raised the conflict of interest concern that its actions added to Metro's revenues at the expense of Metro's clients, while ultimately benefiting Goldman as the owner of Metro.

[1369] Metro counted the more than 600,000 metric tons of aluminum loaded "out" in the six merry-go-round deals as helping it meet the LME's daily minimum load out requirement, even though it appears that nearly all of that metal was loaded right back into a Metro warehouse. See 4/15/2014 letter from Metro legal counsel to LME, GSPSICOMMODS00046834 - 849, at Appendix A, 835; 12/19/2012 MITSI Holdings LLC Board Meeting, prepared by Metro and Goldman, GSPSICOMMODS00009332 - 354, at 348.

The premium sharing payments, described earlier, allowed Metro to profit when the Midwest Premium rose. That type of financial incentive, which was not publicly disclosed, converts a warehouse company from a neutral actor in the aluminum marketplace to a biased market participant favoring higher premium prices. The LME has told the Subcommittee, however, that provided those arrangements did not relate to an LME contract, they would not violate LME rules prohibiting a warehouse company from taking a direct or indirect interest in an LME contract.[1370]

Influencing Warehouse Management. Still another set of conflict of interest concerns involved Goldman's influence over Metro policies and actions. Because Metro was acquired as a merchant banking investment, Goldman was not permitted under U.S. law to routinely manage or control Metro. The evidence indicates, however, that Goldman required Metro senior management to clear many business decisions through the Board of Directors, which was composed exclusively of Goldman employees. That included Board review and approval of the merry-go-round deals. Later, when Metro was publicly criticized for its lengthy queues, it was Goldman who announced that it would swap metal with any aluminum end user waiting in Metro's queue.[1371] In addition, Goldman provided significant assistance to Metro's legal and compliance functions.

Goldman might contend that Metro's decisions about financial incentives, including in the merry-go-round deals, involved millions of dollars and novel arrangements that were not matters of routine management and so should have been subject to Board oversight. Goldman may, in fact, have been involved with reviewing and approving all of Metro's financial incentive programs. But when a trading company influences the incentives paid by a warehouse company to attract or retain metal, its actions may, as they did here, end up influencing prices in the corresponding markets. Similarly, if a trading company influences the incentives paid to metal owners for cancelling warrants, it also influences the length of the warehouse queue which, as discussed above, is highly correlated with the Midwest Premium price. The same is true for a trading company that influences a warehouse company's load out policies, which have a direct impact on the warehouse queue. In all of these cases, the trading company's influence over the warehouse company's actions may provide the trading company with trading advantages.

Each of these conflicts is embedded in the larger issue of commodity trading companies owning commodity warehousing companies. Traditionally, LME-approved warehouses were owned by companies that were not engaged in trading. It is only in the last five years that a significant portion of LME-approved warehouses have come under the ownership of companies that trade in the commodity markets.[1372] That new development raises serious conflict of interest concerns illustrated by the Metro-Goldman relationship.

[1370] 10/15/2014 email from LME legal counsel to Subcommittee, PSI-LME-03-000001 - 004.

[1371] See, e.g., "Goldman Sachs Offers Aluminum to Clients Stuck in Queue," Bloomberg, Michael J. Moore (7/31/2013), http://www.bloomberg.com/news/2013-07-31/goldman-sachs-offers-aluminum-to-clients-stuck-in-queue.html.

[1372] See earlier discussion.

(b) Aluminum Market Impact

The Metro warehouse practices described above also had a broader market impact. In the last five years, Metro has expanded rapidly and, by early 2014, controlled 85% of the U.S. LME aluminum storage market. It also developed an extraordinarily long queue that was highly correlated with the recent, unprecedented increases in the Midwest Premium.

Metro's warehouse practices in Detroit likely contributed to the Midwest Premium's rapid rise since 2010, in both real dollar terms and in its growing percentage of the all-in price of aluminum. That percentage increase necessarily reduced the percentage of the all-in aluminum price attributable to the LME reference price, undermining the ability of aluminum users to effectively hedge their price risks on the LME futures market. Higher premium prices and less effective hedging tools have caused widespread difficulty for aluminum users facing volatile aluminum prices, including in the defense, transportation, beverage, and construction sectors. These facts suggest that changes in aluminum prices over the past several years may not have been simply the product of fundamental market forces of supply and demand, but also responses to the warehousing practices and transactions described in this report. To restore the integrity of warehousing operations and aluminum pricing, it seems essential to separate warehouse companies from trading companies.

(c) Non-Public Information

A third set of concerns highlighted by Goldman's physical aluminum activities involves the issue of a trading company's gaining unfair advantages through access to commercially valuable, non-public information. When Goldman acquired Metro, it acquired a company with vast amounts of commercially valuable, non-public information about aluminum including, with respect to incoming and outgoing metal shipments, information regarding large cancellations, metal re-warranting, non-LME metal stockpiles, and queue lengths. As described earlier, access to that type of information can give a commodity trader an unfair advantage over trading counterparties.

While both Metro and Goldman have information barrier policies designed to implement the LME's requirements, those policies and LME's rules nevertheless allowed over 50 Goldman employees, including some with trading and trading management responsibilities, to receive routine reports with commercially valuable, non-public information from Metro.[1373] For example, Gregory Agran, sat on Metro's Board of Directors at the same time he headed a commodities trading desk for Goldman and worked alongside Goldman aluminum traders on the same trading floor in New York.[1374] Similarly, Isabelle Ealet, who was, for most of the relevant period, Head of Global Commodities at Goldman, received information about Metro while, at the

[1373] 8/15/2014 letter from Goldman legal counsel to Subcommittee, "Follow-up Requests," PSI-Goldman Sachs-17-000001 - 005, at 002, and Exhibits A and B, PSI-GoldmanSachs-17-000007, 009 (also listed as GSPSICOMMODS00046225 - 226).
[1374] Subcommittee interview of Gregory Agran (10/14/2014).

same time, exercising responsibility over all of Goldman's commodities-related trading operations, including aluminum trading.[1375]

When Goldman acquired Metro and obtained access to non-public Metro information, it also increased its aluminum trading, hired new aluminum traders friendly with Metro management, accumulated massive aluminum holdings, engaged in outsized aluminum transactions, and traded in aluminum-related swaps.[1376] In addition, Goldman employees, through the Metro Board of Directors and otherwise, reviewed and approved the merry-go-round deals, which meant Goldman personnel had non-public information about the deals ahead of time, including the size, nature, and timing of the cancellations.

If Metro or Goldman were to violate the LME's information barrier requirements, the LME could rescind approval of Metro's warehouse system. But doing so could disrupt LME trading worldwide and damage the LME itself, making it a difficult penalty to impose.[1377] Another problem is that U.S. law today does not prohibit the use of material, non-public information in commodity transactions in the same manner as securities transactions. For most of its 200-year history, commodity futures markets were relatively small in size and dominated by commodity producers and users seeking to hedge price risks. They traditionally controlled roughly 70% of the futures trading, while speculators controlled only about 30%.[1378] Today, however, those percentages have reversed, and financial firms – including bank holding companies – have become the dominant players in commodity markets.

Pursuant to the Dodd-Frank Act, the Commodity Futures Trading Commission adopted a rule that is intended to implement an "insider trading" prohibition that is similar to the longstanding prohibition on insider trading in the securities laws.[1379] It is unclear, however, if the CFTC's new prohibition applies to the facts described here, and if so, how it might work. For example, even assuming that the LME rule and Metro information barrier policies established a sufficient duty to not trade based on non-public warehouse information, it is unclear whether the scope of the prohibition would cover trading in the physical markets, as opposed to the financial markets. If markets are to be fair in their operations, larger traders should be legally precluded from using material non-public information gained from warehouse ownership to benefit their trading activities in the physical and financial markets for commodities stored in those warehouses.

[1375] Subcommittee interview of Isabelle Ealet (10/14/2014). Ms. Ealet told the Subcommittee that, despite receiving written Metro briefings and occasional updates from Jacques Gabillon, she exercised little to no oversight of Metro operations and was generally not involved in individual commodities trading strategies or positions. Id.

[1376] See 9/17/2014 letter from Goldman legal counsel to Subcommittee, "Follow-Up Requests," PSI-GoldmanSachs-15-000001 - 015, at 003.

[1377] The LME may be in the process of establishing new, more practical penalties and enforcement powers. 11/10/2014 email from LME to Subcommittee, PSI-LME-06-000001 - 003.

[1378] See "Excessive Speculation and Compliance with the Dodd-Frank Act," hearing before the Permanent Subcommittee on Investigations, S. Hrg. 112-313 (11/3/2011) , at 32-33, http://www.gpo.gov/fdsys/pkg/CHRG-112shrg72487/pdf/CHRG-112shrg72487.pdf (testimony of CFTC Chairman Gary Gensler indicating that, 2011, 80% of the oil futures market participants were speculators, as opposed to producers or consumers).

[1379] See "Rule 180.1: The CFTC Targets Fraud and Manipulation," New York Law Journal, David Mesiter, Jocelyn Strauber and Brittany Bettman, (4/7/2014), http://www.newyorklawjournal.com/id=1202649563488/Rule-1801-The-CFTC-Targets-Fraud-and-Manipulation?slreturn=20141010180332.

In the meantime, a trading company that has access to non-public information from a warehouse company presents the former with ongoing opportunities to use that information to benefit its trading activities.

(4) Analysis

All three of the financial holding companies examined by the Subcommittee were heavily involved with aluminum trading. In addition, Goldman was not the only financial holding company that owned a network of LME-approved warehouses. For four years, JPMorgan owned the Henry Bath network of LME warehouses, although those warehouses operated without lengthy queues and JPMorgan sold the business in 2014.

Goldman's aluminum activities and its ownership of Metro illustrate troubling issues involving conflicts of interest, market distortions, and the potential to gain unfair trading advantages from non-public information, all of which can arise when a financial holding company owns a commodity-related business at the same time it is actively trading the same commodities. Since being acquired by Goldman, Metro's practices have likely added billions of dollars in costs to a wide range of aluminum users, from beer makers to car manufacturers to defense companies that make warships for the Navy. It is past time for the Federal Reserve and other regulators, including the LME, to adopt and enforce needed safeguards on this high risk physical commodity activity.

V. MORGAN STANLEY

Morgan Stanley has a long history of involvement with a vast array of physical commodities. For many years prior to becoming a bank holding company in 2008, Morgan Stanley built up an extensive series of businesses involving oil products, adding natural gas as a secondary focus in recent years, among other commodities. This case study examines Morgan Stanley's involvement with natural gas through trading, investments in a major pipeline company, and actions to construct its own natural gas compression facility. It also examines how Morgan Stanley once ran an empire of oil-related commodity activities, including trading, storing, transporting, and supplying oil products, including supplying jet fuel to airlines. Each of the financial holding companies examined by the Subcommittee was heavily involved with oil and natural gas activities; this case history illustrates common issues involving operational risks and conflicts of interest.

A. Overview of Morgan Stanley

Morgan Stanley is a large global financial services firm incorporated under Delaware law and headquartered in New York City.[1380] It is listed on the New York Stock Exchange (NYSE) under the ticker symbol "MS."[1381] In addition to being one of the largest financial holding companies in the United States, Morgan Stanley conducts operations in more than 25 countries and has over 55,000 employees.[1382] In 2013, Morgan Stanley reported total consolidated assets of $833 billion, $32 billion in revenues, and net income of $3.6 billion.[1383]

Morgan Stanley Leadership. The Chairman of the Board and Chief Executive Officer of Morgan Stanley is James P. Gorman.[1384] He has been Chief Executive Officer since 2010 and Chairman of the Board since 2012.[1385] His predecessor was John J. Mack. The Chief Operating Officer is James Rosenthal, and the Chief Financial Officer is Ruth Porat.[1386] The Global Co-Heads of Morgan Stanley Commodities are Simon Greenshields and Colin Bryce.[1387] Three other senior commodities executives are Peter Sherk, Head of North American Power and Gas;

[1380] 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 1. http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm.

[1381] Undated "Investor Relations," Morgan Stanley website, http://www.morganstanley.com/about/ir/sec_filings.html.

[1382] Id.; undated "Global Offices," Morgan Stanley website, http://www.morganstanley.com/about/offices/index.html; undated "Morgan Stanley," New York Times, http://dealbook.on.nytimes.com/public/overview?symbol=MS; 6/30/2014 "Holding Companies with Assets Greater Than $10 Billion," prepared by the National Information Center using data from the Federal Reserve, Federal Financial Institutions Examination Council website, http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx.

[1383] 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 50, http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm; 12/31/2013 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Morgan Stanley with the Federal Reserve.

[1384] 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, at 21, http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm.

[1385] Id.

[1386] Id.

[1387] 1/9/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450.

Deborah Hart, Chief Operating Officer of North American Power and Gas; and Nancy King, Global Head of Oil Liquids Flow.[1388]

(1) Background

Morgan Stanley was formed by former members of J.P. Morgan & Company after enactment of the Glass-Steagall Act of 1933.[1389] Because the Glass-Steagall Act required the separation of commercial banking and investment banking activities, in 1935, Henry S. Morgan, and Harold Stanley left J.P. Morgan & Company, which chose to remain a bank, and formed Morgan Stanley as a separate securities firm.[1390] Since its formation, the firm has grown significantly while conducting a wide range of securities, investment, and other financial activities, including trading in commodities. Morgan Stanley first registered with the CFTC as a futures commodity merchant in 1982,[1391] and over the next few years began trading oil and natural gas futures and options.[1392] In 1986, Morgan Stanley became a publicly traded corporation.[1393]

Bank Holding Company. In September 2008, in the midst of the financial crisis, Morgan Stanley submitted,[1394] and the Federal Reserve approved on the same day,[1395] an application to become a bank holding company with access to Federal Reserve lending programs. At the same time, Morgan Stanley converted an industrial bank it held in Utah into a national bank under supervision of the OCC.[1396] Morgan Stanley also elected to become a financial holding company.[1397] Today, Morgan Stanley owns two banks with federal deposit

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[1388] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 005.

[1389] Undated "Company History - Interactive Timeline." Morgan Stanley website, http://www.morganstanley.com/about/company/timeline/index.html#/year/1930.

[1390] Id.

[1391] Undated "Morgan Stanley & Co. LLC." National Futures Association BASIC website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N.

[1392] 1/9/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450; 2/11/2013 presentation "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley for the Subcommittee (hereinafter, "2013 Morgan Stanley Commodities Business Overview"), PSI-MorganStanley-01-000001 - 027, at 004.

[1393] Undated "Company History - Interactive Timeline." Morgan Stanley website, http://www.morganstanley.com/about/company/timeline/index.html#/year/1980.

[1394] 9/21/2008 "Application to the Board of Governors of the Federal Reserve System by Morgan Stanley for prior approval to acquire 100% of Morgan Stanley Bank, National Association and thereby become a Bank Holding Company Pursuant to Section 3(a)(1) of the Bank Holding Company Act and a Declaration to become Financial Holding Company pursuant Section 225.82 of Regulation Y," prepared by Morgan Stanley and filed with the Federal Reserve, FRB-PSI-302972 - 996 (full capitalization of some words omitted).

[1395] 9/21/2008 "Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain NonBanking Activities," prepared by the Federal Reserve, http://www.federalreserve.gov/newsevents/press/orders/orders20080922a2.pdf; 9/21/2008 Morgan Stanley press release, "Morgan Stanley Granted Federal Bank Holding Company Status by U.S. Federal Reserve Board of Governors," http://www.morganstanley.com/about/press/articles/6933.html.

[1396] 9/21/2008 "Order Approving Formation of Bank Holding Companies and Notice to Engage in Certain NonBanking Activities," prepared by the Federal Reserve, at 1, http://www.federalreserve.gov/newsevents/press/orders/orders20080922a2.pdf.

[1397] Undated "Financial Holding Companies," prepared by the Federal Reserve, http://www.federalreserve.gov/bankinforeg/fhc.htm.

insurance, Morgan Stanley Bank, N.A. and Morgan Stanley Private Bank, N.A.[1398] At the end of 2013, their combined deposits totaled about $112 billion.[1399]

Key Subsidiaries. In addition to its banks, other key Morgan Stanley subsidiaries include Morgan Stanley & Co. LLC, a U.S. broker-dealer and futures commission merchant; Morgan Stanley Smith Barney LLC, another U.S. broker-dealer and futures commission merchant; and Morgan Stanley Capital Services LLC, a U.S. swap dealer.[1400] Morgan Stanley Capital Group Inc. is its leading U.S. subsidiary in the commodities area; it is also a swap dealer.[1401] Its leading U.K. subsidiary is Morgan Stanley & Co. International plc, which is registered as a broker-dealer.[1402]

Major Business Lines. According to Morgan Stanley, it has three primary business segments: (1) Institutional Securities, which provides financial advisory, capital-raising, lending, trading, and investment services to institutional clients such as corporations, hedge funds, and other financial institutions; (2) Wealth Management, which provides similar services to individual investors "through a network of 16,784 global representatives in 649 locations"; and (3) Investment Management, which provides equity, fixed income, real estate investing, and merchant banking activities and services for institutional investors, high net worth individuals, hedge funds, private equity funds, and real estate funds.[1403] The Institutional Securities

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[1398] Undated "Bank Find Results: Morgan Stanley," prepared by Federal Deposit Insurance Corporation (FDIC), http://research.fdic.gov/bankfind/results.html?name=Morgan+Stanley&fdic=&address=&city=&state=&zip= (listing seven FDIC registered banks with the "Morgan Stanley" name, but identifying Morgan Stanley Bank, N.A. and Morgan Stanley Private Bank. N.A. as the only two banks with active FDIC status). Morgan Stanley Bank, N.A. is headquartered in Salt Lake City, Utah and has only one location. It was first established as an industrial bank on May 25, 1990, as Mountainwest Financial Corp. In 1998, it changed to Morgan Stanley Dean Witter Bank, Inc., and took its current name in 2008. when it also converted into a commercial bank under OCC supervision. See undated "Morgan Stanley Bank, National Association (FDIC #: 32992)," prepared by FDIC, FDIC website, http://research.fdic.gov/bankfind/detail.html?bank=32992&name=Morgan%20Stanley%20Bank,%20National%20Association&searchName=Morgan%20Stanley&searchFdic=&city=&state=&zip=&address=&tabId=1. Morgan Stanley Private Bank, N.A. is headquartered in Purchase. New York and also owns "Morgan Stanley Trust Office" in Wilmington, Delaware. Morgan Stanley Private Bank, N.A was established on August 12. 1996, under the name "Dean Witter Trust FSB" as a stock savings bank in Jersey City, New Jersey. On March 24, 1998, it changed its name to Morgan Stanley Dean Witter Trust FSB. On December 10. 2001, the bank changed its name again to "Morgan Stanley Trust." On July 1, 2010, the bank changed to its current name and converted into a commercial bank under OCC supervision. See undated "Morgan Stanley Private Bank, National Association (FDIC #: 34221)," prepared by FDIC, FDIC website, http://research.fdic.gov/bankfind/detail.html?bank=34221&name=Morgan%20Stanley%20Private%20Bank,%20National%20Association&searchName=Morgan%20Stanley&searchFdic=&city=&state=&zip=&address=&tabId=1. See also 6/30/2013 Morgan Stanley Quarterly Report, filed with the SEC on 8/2/2013, at 8-9.
http://www.sec.gov/Archives/edgar/data/895421/000119312513317186/d542053d10q.htm.

[1399] 2013 Annual Report for Morgan Stanley, filed with the SEC on 2/25/2014, at 98,
http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242d10k.htm.

[1400] 7/1/2014 "2014 Morgan Stanley Resolution Plan" (hereinafter "2014 Morgan Stanley Resolution Plan"), prepared by Morgan Stanley, at 9, http://www.federalreserve.gov/bankinforeg/resolution-plans/morgan-stanley-1g-20140701.pdf.

[1401] Id.

[1402] Id.

[1403] Id. at 9-12. See also 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 2-6, http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm

segment's trading and sales activities include both financial and physical commodity activities.[1404]

Commodities. With respect to commodities, Morgan Stanley told the Subcommittee that the "overwhelming majority of business in physical commodities resides in Morgan Stanley Commodities," which is part of its Institutional Securities business segment.[1405] "Morgan Stanley Commodities," also referred to at times as "Global Commodities" and, in the past, as the "Worldwide Commodities Group," is headquartered in Purchase, New York.[1406] In 2013, Morgan Stanley Commodities managed "365 dedicated front office employees and over 1,000 total employees… covering markets 24 hours per day."[1407]

Within the commodities group, Morgan Stanley maintained five offices, or "desks," organized around particular types of commodities: (1) Oil Liquids; (2) North American Electricity and Natural Gas; (3) European Union and Asia Pacific Electricity and Natural Gas; (4) Metals; and (5) Other Commodities.[1408] In addition, Morgan Stanley Commodities maintained a "Principal Investments" office that invested on behalf of Morgan Stanley in commodity-related businesses; a "Global Marketing" office which marketed physical commodities and commodity-related services; and a "Commodities Risk Management" office, which analyzed and monitored risks associated with commodities transactions.[1409]

One key legal entity executing activities on behalf of Morgan Stanley Commodities was Morgan Stanley Capital Group Inc. (MSCG), which conducted the bulk of its commodities trading in the futures, swaps, options, forwards, and spot markets.[1410] MSCG also, through various subsidiaries, owned key physical commodity businesses,[1411] including the Heidmar Group, a marine transportation company,[1412] Wellbore Capital LLC, an oil and gas exploration

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[1404] 2014 Morgan Stanley Resolution Plan, at 10; Subcommittee briefing by Morgan Stanley (9/8/2014).

[1405] 7/16/2013 letter from Morgan Stanley legal counsel to the Subcommittee (hereinafter "2013 Morgan Stanley response to Subcommittee questionnaire"), PSI-MorganStanley-07-000001 - 034, at 001. See also 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," MS-PSI-00000001 – 037, at 005, 007 (showing Commodities is part of Institutional Securities); 2014 Morgan Stanley Resolution Plan, at 10; 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 3-4. http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm. Morgan Stanley explained to the Subcommittee that its Wealth Management business segment had also maintained, since 2008, a small inventory of precious metals, but was not otherwise involved with physical commodities. 2013 Morgan Stanley response to Subcommittee questionnaire, at 6.

[1406] Subcommittee briefing by Morgan Stanley (2/4/2014). See also 5/7/2009 "Morgan Stanley Global Commodities Overview," prepared by Morgan Stanley (hereinafter "2009 Morgan Stanley Global Commodities Overview"). FRB-PSI-618889 - 908, at 893.

[1407] 2013 Morgan Stanley Commodities Business Overview, at 004.

[1408] Id. at 011-027. See also 2009 Morgan Stanley Global Commodities Overview, at 893.

[1409] 2009 Morgan Stanley Global Commodities Overview, at 893.

[1410] Subcommittee briefing by Morgan Stanley (2/4/2014). See also 2009 Morgan Stanley Global Commodities Overview, at 901.

[1411] See 2013 Morgan Stanley Annual Report, Exhibit 21, filed with the SEC on 2/25/2014, http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm.

[1412] 8/2/2006 "Morgan Stanley Capital Group Inc. signs definitive agreement to acquire the Heidmar Group." Morgan Stanley press release, http://www.morganstanley.com/about/press/articles/3767.html.

company,[1413] and Wentworth Holdings LLC, a shell company seeking to build natural gas compression facilities, as described further below.[1414] In addition, MSCG personnel sometimes executed physical commodity supply contracts, such as contracts to supply jet fuel to airlines as described below.[1415] Morgan Stanley also owned numerous other subsidiaries involved with physical commodities, including, for example, TransMontaigne Inc., which operated an oil storage and pipeline company as described below; MSDW Power Development Corporation, which developed power plants and solar power companies, and Morgan Stanley Commodities Trading Hong Kong Holdings Limited.[1416]

Commodities-Related Merchant Banking. In addition to its commodities group, Morgan Stanley engaged in commodity-related activities through certain investment funds and merchant banking activities undertaken in other areas of the bank. Morgan Stanley's Investment Management business segment included a unit called "Merchant Banking and Real Estate Investments."[1417] It housed at least two Morgan Stanley partnerships with commodity-related investments.[1418]

The first was Morgan Stanley Infrastructure Partners LP (MSIP) which Morgan Stanley established in 2007.[1419] A Morgan Stanley subsidiary, MS Infrastructure GP LP, acted as MSIP's general partner; Morgan Stanley employees actually directed and oversaw the investments; and Morgan Stanley was the largest single investor with a nearly 11% ownership stake valued at about $430 million.[1420] MSIP raised $4 billion for investments in infrastructure projects around the world, focused in part on energy and utility projects.[1421] One key holding was Southern Star Central Corporation which owns natural gas storage facilities and pipelines in the U.S. Midwest, described further below.[1422] Others were Continuum Wind Energy which

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[1413] See, e.g., 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-07-000001 - 034. at 008, 034.

[1414] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-13-000001 - 009, at 004 (tracing ownership chain from MSCG to Wentworth Holdings LLC).

[1415] Subcommittee briefing by Morgan Stanley (2/4/2014).

[1416] Id.

[1417] Subcommittee briefing by Morgan Stanley (9/8/2014).

[1418] Id.; 8/29/2014 presentation, "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley. MS-PSI-00000001 - 037, at 005; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 326.

[1419] 8/29/2014 presentation, "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley. MS-PSI-00000001 - 037, at 009.

[1420] Id. at 002, 006, 009 (disclosing $430 million MSIP investment by Morgan Stanley in fund that raised $4 billion overall); Subcommittee briefing by Morgan Stanley (9/8/2014); 10/24/2014 presentation "Morgan Stanley Infrastructure Partners Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 456; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 328.

[1421] 8/29/2014 presentation, "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009, 011; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 331. See also undated "OECD Assets within Morgan Stanley Infrastructure Portfolios," prepared by Morgan Stanley Infrastructure, http://www.morganstanley.com/infrastructure/portfolio.html.

[1422] See 8/23/2012 Morgan Stanley press release, "Morgan Stanley Infrastructure Partners Acquires Full Ownership of Southern Star Central Corp.," http://www.morganstanley.com/infrastructure/pdf/msin_08232012.pdf.

developed and financed wind farms in India; SAESA Group, which is the second largest energy distributor in Chile; and Zhaoheng Hydropower, which operated hydropower plants in China.[1423]

The second partnership within Merchant Banking and Real Estate Investments is Morgan Stanley Global Private Equity.[1424] Like the infrastructure partnership, a Morgan Stanley subsidiary acted as the general partner; Morgan Stanley employees actually directed and oversaw its investments; and Morgan Stanley was the largest single investor with an ownership interest varying from 23% to 33% since 2008.[1425] Morgan Stanley Global Private Equity has sponsored five investment funds, some of which have made commodity-related investments. The most recent fund, for example, has investments in Triana Energy, a U.S. natural gas exploration and production company; Trinity, a U.S. carbon dioxide pipeline company; and Sterling Energy, a U.S. natural gas gathering, processing, and marketing company.[1426]

In 2013, Morgan Stanley prepared a list of its "Commodities Division Merchant Banking Investments" and provided it to the Federal Reserve.[1427] The list identified investments in a new TransMontaigne oil storage facility expected to begin operations in late 2013, an aircraft fuel storage facility at an airport in the Netherlands, and a number of solar power projects.[1428] The list did not include any reference, however, to the commodity-related investments made by the Morgan Stanley Infrastructure or Global Private Equity investment funds.[1429] In June 2014, Morgan Stanley reported to the Federal Reserve that it held merchant banking investments with a total value of about $11 billion, of which about $5 billion was held under the Gramm-Leach-Bliley Act; it remains unclear how many of those were commodity related and whether the total included the commodity-related projects in the two investment funds.[1430]

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, Morgan Stanley trades commodities-related financial instruments, including futures, swaps, and options, involving billions of dollars each day. Morgan Stanley is among the ten largest financial institutions in the United States trading financial commodity instruments, according to Coalition Development Ltd., a company that collects commodity

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[1423] See 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 333; undated "Home," on the Continuum Wind Energy website, http://continuumenergy.in/ (providing the company history and stating it is majority-owned by MSIP); 11/8/2011 Morgan Stanley press release, "Morgan Stanley Infrastructure Announces Sales of Its Interest in SAESA Group," http://www.morganstanley.com/infrastructure/pdf/11082011.pdf (indicating MSIP acquired a 50% ownership interest in SAESA Group in 2008, and sold it in 2011).

[1424] Subcommittee briefing by Morgan Stanley (9/8/2014); 10/24/2014 "Morgan Stanley Infrastructure Partners[:] Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 460 [sealed exhibit].

[1425] See 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 003.

[1426] See undated "Morgan Stanley Global Private Equity - Portfolio," Morgan Stanley website, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html.

[1427] Undated "Commodities Division Merchant Banking Investments," prepared by Morgan Stanley, FRB-PSI-400001 - 382, at 318.

[1428] Id.

[1429] Id.

[1430] 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies – FR Y-12," prepared by Morgan Stanley and filed with the Federal Reserve, FRB-PSI-800009 - 012.

trading statistics.[1431] OCC data indicates it is one of the largest financial institutions trading commodity-related derivatives.[1432]

Commodities Revenues. Historically, commodity activities provided a significant revenue stream for Morgan Stanley. Over time, revenues derived from this area have dropped substantially. According to an internal Morgan Stanley presentation, in 2008, the commodities group produced about $3 billion in revenues for the firm,[1433] with "22% and 26% [c]ompound [a]nnual [g]rowth [r]ates for revenues and [p]rofit [b]efore [t]ax, respectively."[1434] The Federal Reserve estimated that, as of March 31, 2011, Morgan Stanley had about $13.1 billion in commodities-related assets, of which about $9 billion "relate[d] to the ownership and trading of oil-related commodities" and $900 million "relate[d] to the ownership and trading of electricity and natural gas in North America."[1435]

In a 2013 presentation to the Subcommittee, however, Morgan Stanley provided data showing that its commodities revenues had declined every year since 2008.[1436] From a total of $3 billion in 2008, its net revenues had fallen by two-thirds in 2012, to $912 million.[1437] The oil liquids desk experienced the greatest drop in revenues, falling from $1.4 billion in 2008, to a 2012 total of $676 million.[1438]

(2) Historical Overview of Involvement with Commodities

According to Morgan Stanley, it first began trading physical and financial commodities in the early 1980s.[1439] Its first foray was in 1982, after it registered as a futures commissions merchant, trading precious metals.[1440] Over the next few years, Morgan Stanley also began

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[1431] 9/2014 "Global & Regional Investment Bank League Tables - 1H2014," prepared by Coalition Development Ltd., PSI-Coalition-01-000019 - 025, at 020 - 021.

[1432] 12/31/2013 "OCC Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013," prepared by OCC, at Tables 1 and 2. http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf.

[1433] 2009 Morgan Stanley Global Commodities Overview, at 896; 2013 Morgan Stanley response to Subcommittee questionnaire, at 5.

[1434] 2009 Morgan Stanley Global Commodities Overview, at 891.

[1435] 6/19/2011 internal Federal Reserve email, "MS Commodities details for 4(o) memo," FRB-PSI-200942 - 943, at 943.

[1436] 2013 Morgan Stanley Business Overview, at 009.

[1437] Id.

[1438] Id. See also "Morgan Stanley Said to Cut 10% of Commodities Jobs Amid Rut," Bloomberg, Michael J. Moore (6/20/2013), http://www.bloomberg.com/news/print/2013-06-20/morgan-stanley-said-to-cut-commodities-jobs-as-revenue-declines.html ("Morgan Stanley is cutting jobs in its commodities business, one of the Wall Street's three biggest, after Chief Executive Officer James Gorman said revenue the past two quarters was among the unit's worst in 18 years.").

[1439] See undated document prepared by the Federal Reserve entitled, "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 and Present," FRB-PSI-200428 - 454, at 452 (presenting two timelines described as having been submitted by Morgan Stanley to the Federal Reserve "[d]uring exams") [sealed exhibit]. The same two timelines appear in an undated document prepared by the Federal Reserve entitled, "Appendix: Morgan Stanley Global Commodities Timelines" (hereinafter "Morgan Stanley Global Commodities Timelines"), FRB-PSI-000025 [sealed exhibit]. In addition, one of the timelines appears in 2009 "Morgan Stanley Global Commodities Overview," FRB-PSI-618889 - 908, at 892; and in 2013 Morgan Stanley Commodities Business Overview, at PSI-MorganStanley-01-000011, at 011 - 027.

[1440] 2009 Morgan Stanley Global Commodities Overview, at 889 - 908.

trading crude oil and natural gas.[1441] In 1984, Morgan Stanley entered into a joint venture with Transco Energy Company and others to form the Natural Gas Clearinghouse (NGC), which "brokered and marketed natural gas and gas liquids" and owned pipeline transportation operations.[1442] In 1985, Morgan Stanley bought out the other investors to acquire sole ownership, then sold NGC in 1989.[1443] In the late 1980s, according to Morgan Stanley, it also began intensifying its activities associated with storing oil, chartering oil transport, and refining oil products.[1444] During all of this period, Morgan Stanley operated, not as a bank, but as a securities firm that had no restrictions on its commodity-related investments.

During the 1990s and the first decade of the 2000s, Morgan Stanley continued to increase its commodities trading activities as well as its investments in physical commodity businesses. According to Morgan Stanley, in the 1990s, it expanded into trading base metals and electricity, while making investments in a hydroelectric power producer, aluminum manufacturer, and steel rolling mill.[1445] Over time, Morgan Stanley acquired additional interests in power plants, holding, directly or through subsidiaries, interests in seven power plants (two in the United States and five abroad), seven wind generation companies, and thirteen solar power generation companies.[1446]

In addition, according to Morgan Stanley, between 1990 and 2000, it invested in the following commodity-related ventures: a company that produced fertilizer and other agricultural minerals and chemicals; a pork production facility and packing plant; "the largest methanol production facility in the U.S."; and two natural gas companies, one of which owned an interstate natural gas pipeline and marketing facility.[1447] Other commodity-related holdings included an investment in the Tennessee Valley Steel Corporation; an entity which owned two major ethylene production facilities and five processing plants; and a railroad freight transporter.[1448] By September 30, 1997, Morgan Stanley reported that, through Morgan Stanley Capital Group Inc. and Morgan Stanley & Co. International, it was engaged in a "variety of commodity derivative and physical commodity transactions ... [in] crude oil and oil liquids, natural gas, electricity and other power and energy commodities and metals."[1449]

In 2000, Morgan Stanley joined other financial institutions and oil companies in founding the Intercontinental Exchange (ICE), an electronic trading facility specialized in commodity-

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[1441] Id. See also 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174 - 178 (citing investments in various natural gas producing, processing, and transportation ventures).
[1442] 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 171.
[1443] Id.
[1444] 2009 Morgan Stanley Global Commodities Overview, at 889 - 908.
[1445] Id. See also 5/17/2011 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200167 - 172, at 169 - 171.
[1446] See 11/27/2009 chart prepared by the Federal Reserve entitled, "Commodities Activities at Goldman Sachs and Morgan Stanley." FRB-PSI-200944 - 959, at 952 [sealed exhibit]. See also 8/31/2005 "Federal Energy Regulatory Commission Reply to Morgan Stanley" (hereinafter "FERC Reply"), prepared by FERC, FERC website, http://www.ferc.gov/eventcalendar/Files/20050831171232-ER94-1384-030.pdf (listing as parties to a FERC enforcement action some Morgan Stanley wholly-owned subsidiaries that owned or operated power plants).
[1447] 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 169-170; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 175.
[1448] 5/17/2011 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200167 - 172, at 171; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 175.
[1449] 7/8/2010 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200173 - 182, at 173.

linked financial instruments.[1450] Morgan Stanley further expanded its commodities activities into the areas of coal and freight (2001), biofuels (2005), emissions (2004), and agriculture (2007).[1451] Morgan Stanley also became involved with power plants, acquiring 100% ownership of a number of power plants, including power plants in Nevada, Georgia, and Alabama.[1452] All of these activities took place prior to Morgan Stanley's conversion to a bank holding company in September 2008.

During the 25-year period from 1982 to 2007, Morgan Stanley concentrated significant resources on building its investments related to oil products, acquiring businesses involved in, not only the trading of oil-linked financial instruments, but also the production, storage, transport, and delivery of physical oil products, as further explained below. Morgan Stanley reported that, by 2008, oil liquids accounted for approximately 50% of its Worldwide Commodities Group balance sheet.[1453]

In September 2008, in the midst of the financial crisis, when Morgan Stanley applied to become a bank holding company, its application included this description of its commodity activities:

> "The Applicant trades as principal and maintains long and short proprietary trading positions in the spot, forward and futures markets in several commodities, including metals (base and precious), agricultural products, crude oil, oil products, natural gas, electric power, emissions credits, coal, freight, liquefied natural gas ('LNG') and related products and indices. The Applicant is a market-maker in exchange-traded options and futures and OTC options and swaps on commodities, and offers counterparties hedging programs relating to productions, consumption, reserve/inventory management and structured transactions, including energy-contract securitizations. The Applicant is also an electricity power marketer in the U.S. and owns five electricity generating facilities in the U.S. and Europe. The Applicant owns TransMontaigne Inc. and its subsidiaries, a group of companies operating the refined petroleum products marketing and distribution business, and an interest in the Heidmar Group of companies, which provide international marine transportation and U.S. marine logistics services."[1454]

[1450] Morgan Stanley Global Commodities Timelines; "Intercontinental Exchange to Acquire NYSE for $8.2 Billion," Bloomberg, Nina Mehta & Nandini Sukumar (12/20/12), http://www.bloomberg.com/news/2012-12-20/intercontinentalexchange-said-in-merger-talks-with-nyse-euronext.html (explaining the Intercontinental Exchange as a "12-year-old energy and commodity futures bourse" with Morgan Stanley as its lead adviser).

[1451] "2009 Morgan Stanley Global Commodities Overview," FRB-PSI-618889 - 908.

[1452] Subcommittee briefing by Morgan Stanley (11/18/2014); 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, Exhibit 21, http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm.

[1453] 2009 Morgan Stanley Global Commodities Overview, at FRB-PSI-618889 - 908.

[1454] 9/21/2008 "Application to the Board of Governors of the Federal Reserve System by Morgan Stanley for prior approval to acquire 100% of Morgan Stanley Bank, National Association and thereby become a Bank Holding Company Pursuant to Section 3(a)(1) of the Bank Holding Company Act and a Declaration to become Financial Holding Company pursuant Section 225.82 of Regulation Y," FRB-PSI-302972 - 996, at 979 (full capitalization of some words omitted).

The application noted that, in 2007, Morgan Stanley had formed a "Merchant Banking Division" which included "private equity funds and [an] infrastructure investing group."[1455]

Morgan Stanley's 2008 application also included these overall observations on its commodities activities, as well as a request for a five-year grace period to "conform or divest any impermissible activities":

> "Physical commodities may exceed the Federal Reserve's cap of 5% of Tier 1 capital. The commodities business extends beyond the Federal Reserve restriction that physical commodities be limited to those for which derivative contracts have been authorized for trading on a U.S. futures exchange by the CFTC. ... Accordingly, Morgan Stanley respectfully requests that the Federal Reserve grant a five-year grace period during which Morgan Stanley can conform or divest any impermissible activities or investments."[1456]

Although Morgan Stanley's application acknowledged that it might be asked to divest some of its physical commodity activities, the Federal Reserve did not, in 2008, make that request.

After becoming a bank holding company, Morgan Stanley continued for a number of years to expand its physical commodity activities. By 2013, Morgan Stanley had accumulated a long list of commodity-related subsidiaries. They included Heidmar Group, Inc., Morgan Stanley Infrastructure Inc., Morgan Stanley International Holdings, Inc., Morgan Stanley Petroleum Development LLC, Morgan Stanley Renewables, Inc., MSDW Power Development Corp., MS Solar Holdings Inc., MS Solar Solutions Corp., Olco Petroleum, South Eastern Electric Development Corporation, South Eastern Generating Corp., and TransMontaigne Inc., each of which had been involved with acquiring interests in businesses that handle physical commodities.[1457]

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, Morgan Stanley was one of the ten banks it examined in detail. Morgan Stanley was also featured in the October 2012 Summary Report issued by the Federal Reserve's Commodities Team summarizing the findings of the special review.[1458]

The 2012 Summary Report described Morgan Stanley's wide-ranging physical commodity activities. According to the report, Morgan Stanley held operating leases on more

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[1455] Id. at 982.
[1456] Id. at 986.
[1457] See, e.g., 2013 Morgan Stanley Annual Report, filed with the SEC on 2/25/2014, Exhibit 21, http://www.sec.gov/Archives/edgar/data/895421/000119312514067354/d639242dex21.htm; undated document prepared by the Federal Reserve entitled, "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 and Present," FRB-PSI-200428 - 454, at 444-446 [sealed exhibit]; 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 181.
[1458] 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by the Federal Reserve Bank of New York Commodities Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510 [sealed exhibit].

than one hundred oil storage tank fields with a global storage capacity of 58 million barrels;[1459] "18 natural gas storage facilities in US and Europe with total lease payments as high as $2[billion]";[1460] and six power plants, three of which were in the United States.[1461] The 2012 Summary Report also noted that Morgan Stanley had "over 100 ships under time charters or voyages for movement of oil product, and was ranked 9th globally in shipping oil distillates in 2009."[1462] According to the report, Morgan Stanley also planned to increase its capacity to ship liquefied natural gas.[1463]

The 2012 Summary Report also identified multiple concerns with Morgan Stanley's physical commodities operations. One Federal Reserve concern was that Morgan Stanley, like its peers, had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that, while Morgan Stanley had calculated a potential oil spill risk of $360 million, through "aggressive assumptions" and "diversification benefits," it had reduced that total by nearly 70% to $54 million, allocating risk capital for only that much smaller amount.[1464] In addition, the 2012 Summary Report expressed concern that Morgan Stanley had determined that the "operational and event risks of owning power facilities" was capped at the dollar value of those facilities in the event of their total loss, with some insurance to cover "the death and disability of workers" and some facility replacement costs, but leaving all other expenses, including a "failure to deliver electricity under contract," to be paid by the holding company.[1465] At another point, the 2012 Summary Report compared the level of Morgan Stanley's capital and insurance reserves against estimated costs associated with "extreme loss scenarios," and found that, like its peers, "the potential loss exceeds capital and insurance" by $1 billion to $15 billion.[1466] If Morgan Stanley were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

In 2013, when the Subcommittee asked Morgan Stanley about its physical commodity activities, the financial holding company provided information that, consistent with the 2012 Summary Report, depicted far-reaching commodity operations. Morgan Stanley reported trading in the physical commodities of aluminum, copper, gold, lead, palladium, platinum, silver, rhodium, zinc, coal, crude oil, heating oil, ethanol, fuel oil, gasoline, jet kerosene, naphtha, and natural gas.[1467] Morgan Stanley also reported maintaining inventories of many physical commodities. In 2012, the last complete year of data provided to the Subcommittee, those

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[1459] Id. at 485.
[1460] Id.
[1461] Id.
[1462] Id. at 486.
[1463] Id.
[1464] Id. at 493 - 494.
[1465] Id. at 494.
[1466] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.
[1467] 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-03-000001 - 006, at 003.

inventories included 5,300 metric tons of aluminum, 3,600 metric tons of copper, 1.7 million barrels of crude oil, 5.8 million barrels of heating oil, and 6.2 million barrels of gasoline.[1468]

"Optimizing" its Commodity Activities. In September 2014, Morgan Stanley told the Subcommittee that, while it did not intend to exit the physical commodities business entirely, it was exiting its "global physical oil merchanting business," meaning its worldwide business of buying, selling, storing, and transporting oil for clients, including through its U.S. subsidiary, TransMontaigne, Inc.[1469] Morgan Stanley explained:

> "Morgan Stanley has decided to exit certain of its physical commodities business lines, including its global physical oil merchanting business and its investment in TransMontaigne, Inc.
>
> Morgan Stanley plans to realign its commodities business to be more client focused. It plans to continue developing its global commodities business, which is focused on providing risk management and financing services to its clients across the commodities space, including risk intermediation, liquidity provision, lending and investor business, as well as providing supply solutions to its clients."[1470]

On July 1, 2014, Morgan Stanley completed the sale of TransMontaigne to NGL Energy Partners LP for $200 million cash plus an additional $347 million for inventory transferred at closing.[1471] This sale transferred to NGL Energy a significant portion of Morgan Stanley's physical commodity activities, including extensive oil and gas storage and pipeline capacity in the United States. On December 20, 2013, Morgan Stanley also entered into an agreement with a subsidiary of Rosneft Oil Company to sell the rest of its global oil merchanting business.[1472] Rosneft is a Russian state-owned corporation that is the country's largest petroleum company and third largest gas producer.[1473] Morgan Stanley planned to sell to Rosneft another large segment of its physical commodity activities, including oil storage facility leases and a large inventory of oil products. Morgan Stanley has since indicated publicly that the planned sale may not close due to recent sanctions imposed by the United States on Rosneft in connection with

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[1468] Id.
[1469] Subcommittee briefing by Morgan Stanley's legal counsel (9/11/2014); 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.
[1470] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.
[1471] 7/2/2014 NGL Energy press release, "NGL Energy Partners LP Announces Completion of Acquisition of TransMontaigne GP and Related Assets." http://www.nglenergypartners.com/investor-relations/news/. See also "Morgan Stanley to sell oil business TransMontaigne to NGL Energy." The Wall Street Journal, Justin Baer, (6/9/2014), http://online.wsj.com/articles/morgan-stanley-sells-stake-in-transmontaigne-to-ngl-1402316959.
[1472] 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm; 12/20/2013 Morgan Stanley press release, "Morgan Stanley to sell global oil merchanting business to Rosneft," http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aac3.html.
[1473] See 7/16/2014 Treasury press release, "Announcement of Treasury Sanctions on Entities Within the Financial Services and Energy Sectors of Russia, Against Arms or Related Materiel Entities, and those Undermining Ukraine's Sovereignty," http://www.treasury.gov/press-center/press-releases/Pages/jl2572.aspx.

Russia's incursions into Ukraine.[1474] If the sale does not proceed, Morgan Stanley has indicated that it will work to locate another buyer for the rest of its oil merchanting business.[1475]

In contrast to its efforts to exit its oil merchanting business, in recent years, Morgan Stanley has taken actions to continue and even expand its physical natural gas holdings. In 2012, the Morgan Stanley Infrastructure Partners investment fund acquired a 100% ownership of Southern Star, a large natural gas pipeline company in the Midwest, as explained below.[1476] In 2013, Morgan Stanley initiated an effort to build, own, and operate compressed natural gas facilities in Texas and Georgia, as described below.[1477] In August 2014, Morgan Stanley purchased a large number of natural gas trading book assets from Deutsche Bank, consisting primarily of financial rather than physical assets, also described below.[1478]

In October 2014, however, Morgan Stanley told the Subcommittee that it was reconsidering its natural gas activities and may sell both Southern Star and its compressed natural gas project.[1479] In November 2014, Morgan Stanley's Chief Executive Officer James Gorman gave a public interview in which he indicated that Morgan Stanley was in the process of "optimizing" its commodities business to eliminate ownership and operation of physical assets:

> "We've been pretty clear about our commodities businesses. It essentially is two businesses. We have physical businesses, where we actually own and operate physical assets. We store fuel, we own pipelines, we ship oil .... And on the other side is the trading business, where we facilitate trading for people in need to hedge their exposure to wheat, or pork bellies, or silver, or gold, or whatever commodity. And what I've said by optimizing is, we're not going to be in the physical side. .... All we're doing by optimizing is removing the ownership and operation of [the] physical commodity plant. What other firms do is their business, that's what Morgan Stanley is going to do."[1480]

Morgan Stanley explained to the Subcommittee that these plans apply only to its commodities division, but not to other areas of the bank, and that the commodities division would be focusing on "its core strength – providing intermediation, risk management, and supply

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[1474] Id.; 9/12/2014 Treasury press release. "Announcement of Expanded Treasury Sanctions within the Russian Financial Services. Energy and Defense or Related Materiel Sectors," http://www.treasury.gov/press-center/press-releases/Pages/jl2629.aspx; "Morgan Stanley says 'no assurance' Rosneft deal will close." Reuters (10/10/2014), http://www.reuters.com/article/2014/10/10/morgan-stanley-rosneft-idUSL2N0S524L20141010.

[1475] 11/18/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 002.

[1476] Undated "OECD Assets within Morgan Stanley Infrastructure Portfolios" prepared by Morgan Stanley, Morgan Stanley website, http://www.morganstanley.com/infrastructure/; 8/29/2014 presentation "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037; Subcommittee interview of Morgan Stanley (9/8/2014).

[1477] 8/29/2014 presentation "Morgan Stanley Infrastructure Partners Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006.

[1478] See 9/19/2014 letter from Morgan Stanley's legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009.

[1479] Subcommittee briefing by Morgan Stanley legal counsel (10/22/2014).

[1480] 11/13/2014 interview of James Gorman, Bloomberg, http://www.bloomberg.com/video/morgan-stanley-ceo-gorman-on-industry-strategy-OPPkV0QFQqC4JAbdcv1mYQ.html.

services – rather than owning transportation, storage, or other infrastructure assets that are used in connection with physical commodities."[1481] Morgan Stanley also wrote:

> "Morgan Stanley expects to continue to purchase, sell, and make and take delivery of physical commodities in connection with its core business of providing intermediation and risk management to its clients. … Effective hedging strategies include transacting in physical commodities. Morgan Stanley Commodities division will use fully-vetted third party owners and operators of any facilities used to transport, store, produce, generate, or modify those commodities."[1482]

These explanations indicate that Morgan Stanley is reducing its physical commodities activities, but not exiting the area.

[1481] 11/18/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 004.
[1482] Id. at 004 - 005.

B. Morgan Stanley Involvement with Natural Gas

Morgan Stanley has long been an active trader of natural gas. Over the last five years, it has also used shell companies and merchant banking investments controlled by Morgan Stanley personnel to invest in an array of physical natural gas businesses. Over the last year, Morgan Stanley set up three shell companies under the name of Wentworth to build and operate a $355 million compressed natural gas facility in Texas. In one of the first operations of its kind, the facility is designed to produce containerized gas on a large-scale, primarily for export to Central America and the Caribbean. In addition, Morgan Stanley has engaged in commodity-related merchant banking activities through two investment funds it controls, Morgan Stanley Infrastructure Partners and Morgan Stanley Global Private Equity. Those merchant banking activities include a large natural gas pipeline company in the Midwest, Southern Star, as well as natural gas exploration, production, and processing facilities around the country. Because Morgan Stanley relied on its merchant banking and grandfather authorities, Morgan Stanley did not notify or obtain prior permission from the Federal Reserve to engage in those physical natural gas activities.

Morgan Stanley's physical natural gas activities raise multiple concerns, including using shell companies to conduct physical commodity activities, unfair competition in commercial enterprises, insufficient capital and insurance to protect against operational and catastrophic event risks, conflicts of interest arising from obtaining non-public information about natural gas supplies and transport, while trading natural gas in the financial markets, and inadequate safeguards on high risk natural gas activities.

(1) Background on Natural Gas

Natural gas is an odorless, gaseous mixture of hydrocarbons dominated by methane.[1482] It is a primary source of energy in the United States, representing nearly one quarter of U.S. energy consumption.[1483] In the United States, natural gas consumption is second only to oil, followed by coal, nuclear, and other energy sources.[1484] The U.S. Department of Energy (DOE) estimates that one-third of U.S. natural gas consumption goes to "residential and commercial uses, such as heating and cooking; one-third to industrial uses; and one-third to electric power production."[1485] According to the U.S. Energy Information Administration (EIA), natural gas consumption has increased in the United States over the past five years, particularly in the

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[1482] See undated "Natural Gas Fuel Basics," DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

[1483] "Excessive Speculation in the Natural Gas Market," hearing before the U.S. Senate Permanent Subcommittee on Investigations, S. Hrg. 110-235 (6/25/2007 and 7/9/2007), at 210 (hereinafter "2007 Subcommittee Hearing"). See also undated "Uses," NaturalGas.org, http://naturalgas.org/overview/uses/.

[1484] See 7/3/2013 EIA report "Energy sources have changed throughout the history of the United States," http://www.eia.gov/todayinenergy/detail.cfm?id=11951. In 2013, the United States consumed approximately 26 trillion cubic feet of natural gas. See "Frequently Asked Questions," EIA website, http://www.eia.gov/tools/faqs/faq.cfm?id=50&t=8.

[1485] See undated "Natural Gas Fuel Basics," DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

industrial sector, due to low prices.[1486] Inexpensive natural gas has been directly linked, for example, to increased manufacturing and related jobs.[1487] U.S. natural gas exports have also been growing.[1488]

Natural Gas Production. The United States has become a leading producer of natural gas. According to the American Gas Association:

> "Beginning in 2006, domestic natural gas production began to grow and has done so every year since, primarily due to the development of domestic, onshore, unconventional resources – specifically shale gas – to the point where the U.S. is now the world's largest gas producer."[1489]

EIA has indicated that it anticipates natural gas production will grow by 5% in 2014, and another 2% in 2015, driven by industrial demand.[1490] According to DOE, in recent years, 80% to 90% of the natural gas used in the United States was produced domestically.[1491]

Natural Gas Infrastructure. To produce usable energy from natural gas, an extensive infrastructure is required. It includes pipelines, initial treatment plants, refineries, and storage facilities. More than 2.4 million miles of underground pipelines transport natural gas from gas fields and wellheads to refineries, utilities, residences, and industrial sites, "provid[ing] service to more than 177 million Americans."[1492] Initial treatment plants process raw natural gas to ready it for transport to larger refineries.[1493] Refineries remove additional impurities and fluids to produce "pipeline quality" dry natural gas.[1494] Storage facilities capture and pressurize gas for later use. As the American Gas Association has explained:

> "Natural gas utilities purchase natural gas during warm-weather months, when it traditionally costs less, and store it for later use on cold days. Storage can account for half

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[1486] See 9/2014 "Short-term Energy and Winter Fuels Outlook," section on "Natural Gas," EIA website, http://www.eia.gov/forecasts/steo/report/natgas.cfm.

[1487] See, e.g., "Job growth expected from cheap natural gas." USA Today, Paul Davidson (3/27/2012), http://usatoday30.usatoday.com/money/industries/energy/story/2012-03-27/natural-gas-manufacturing-boom/53812740/1 (One estimate was that inexpensive natural gas "could help U.S. manufacturers save $11.6 billion a year and create more than 500,000 jobs by 2025.").

[1488] See 9/2014 "Short-term Energy and Winter Fuels Outlook," section on "Natural Gas," EIA website, http://www.eia.gov/forecasts/steo/report/natgas.cfm.

[1489] 2014 "Natural Gas Supply and Prices," American Gas Association website, http://www.aga.org/Newsroom/factsheets/Documents/Supply%20and%20Prices.pdf.

[1490] "Short-term energy and winter fuels outlook," (10/07/2014), EIA website, http://www.eia.gov/forecasts/steo/report/natgas.cfm.

[1491] See undated "Natural Gas Fuel Basics," DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.

[1492] 2014 "Get the Facts: Pipeline Safety," American Gas Association website, http://www.aga.org/Newsroom/factsheets/Documents/Pipeline%20Safety.pdf.

[1493] See, e.g., 1/2006 "Natural Gas Processing: The Crucial Link Between Natural Gas Production and Its Transportation to Market," prepared by EIA Office of Oil and Gas, at 3, http://www.eia.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf.

[1494] Id.

> of some utilities' natural gas supplies on winter's coldest days, contributing to reliable service."[1495]

Currently, natural gas in storage continues to outpace historical norms.[1496] Exporters of natural gas use Liquefied Natural Gas (LNG) or Compressed Natural Gas (CNG) facilities to prepare the gas for shipment.

Natural Gas Markets. Natural gas prices are determined through two types of markets, physical and financial. As explained in an earlier Subcommittee report examining the natural gas market:

> "Natural gas prices are determined through the interaction of the two major types of markets for natural gas: the cash (or 'physical') markets, which involve the purchase and sale of physical quantities of natural gas; and the financial markets, which involve the purchase and sale of financial instruments whose prices are linked to the price of natural gas in the physical market."[1497]

In the cash markets, natural gas prices are generally negotiated by the buyers and sellers.[1498] Key market participants are natural gas producers, distributors, utilities, and industrial users.

In the financial markets, natural gas can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. One key financial instrument, listed by the CME Group Inc., is a standardized natural gas futures contract for 10,000 mmBtu (millions of British thermal units) of natural gas.[1499] Known as the Henry Hub natural gas futures contract, it is the "third-largest physical commodity futures contract in the world by volume," and is widely used as a benchmark price for physical natural gas transactions in the United States.[1500] The contract can be settled financially or through the physical delivery of natural gas, although physical settlement is atypical.[1501] The contract is traded on the CME Globex and CME Clearport trading platforms, and by open outcry on the NYMEX floor.[1502] The natural gas futures market has numerous participants, and Henry Hub futures contracts typically have substantial open interest on a daily basis. Natural gas can also be traded through a variety of financially-settled, over-the-counter swaps and options on the Intercontinental Exchange

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[1495] 2014 "Natural Gas Supply and Prices," American Gas Association website. http://www.aga.org/Newsroom/factsheets/Documents/Supply%20and%20Prices.pdf.

[1496] 9/2014 "Short-term Energy and Winter Fuels Outlook," section on "Natural Gas," EIA website. http://www.eia.gov/forecasts/steo/report/natgas.cfm.

[1497] 2007 Subcommittee Hearing, at 224.

[1498] Id.

[1499] See "Henry Hub Natural Gas Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_contract_specifications.html?gclid=COeq9vj3tb0CFYhaMgodJGwAfw.

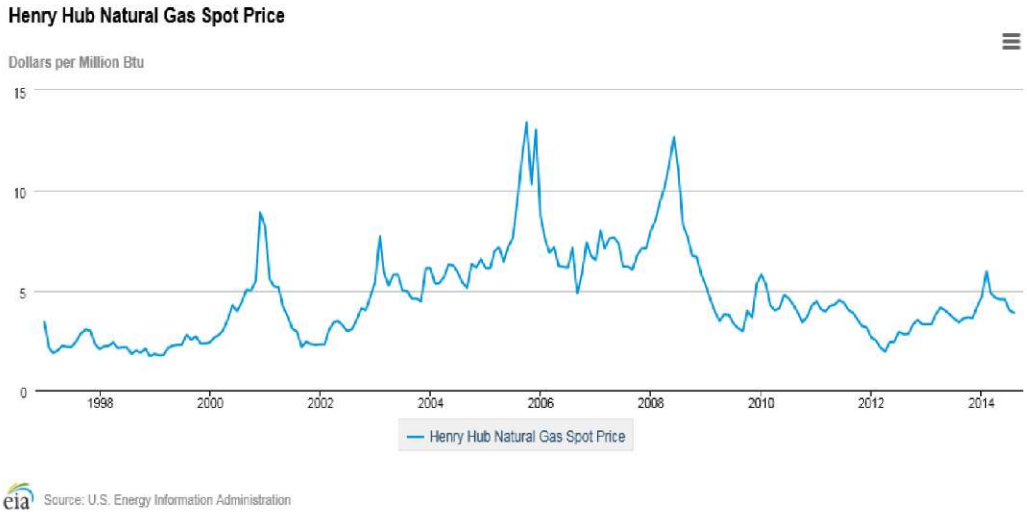
[1500] "Henry Hub Natural Gas Volume," CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_volume_voi.html?gclid=CN3syN245bwCFRPxOgodghMAzg. It is known as the Henry Hub futures contract, because the contract price is based on delivery of the natural gas at the Henry Hub in Louisiana, where a number of natural gas pipelines converge.

[1501] Id. See also 2007 Subcommittee Hearing, at 224.

[1502] See "Henry Hub Natural Gas Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/energy/natural-gas/natural-gas_contract_specifications.html?gclid=COeq9vj3tb0CFYhaMgodJGwAfw.

(ICE).[1503] The natural gas financial market as a whole is a large, complex, and active trading market.

Natural Gas Prices. Natural gas prices have traditionally been volatile.[1504] Seasonal demand for natural gas, which typically peaks during winter months and drops during summer months, contributes to the price volatility.[1505] In the physical markets, over time, natural gas spot market prices have ranged from $3 to $13/mmBtu, with current prices on the low end around $4.[1506] Natural gas is currently one of the least expensive sources of energy in the United States.[1507]



*Source: U.S. Energy Information Administration[1508]

Natural Gas Incidents. Natural gas is highly flammable, and leaks can lead to explosions. Between 1994 and 2013, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) identified 944 serious pipeline incidents.[1509] PHMSA defines a "serious incident" as one including a fatality or injury requiring hospitalization.[1510] Those 944 incidents included 362 fatalities and 1,397 injuries.[1511] The data

[1503] See "Natural Gas," ICE website, https://www.theice.com/publicdocs/ICE_NatGas_Brochure.pdf.
[1504] See id.
[1505] Id.
[1506] Id.
[1507] "Levelized cost and levelized avoided cost of new generation resources in the annual energy outlook 2014," EIA Energy Outlook 2014, (05/07/2014), http://www.eia.gov/forecasts/aeo/electricity_generation.cfm.
[1508] "Henry Hub Natural Gas Spot Price," U.S. Energy Information Administration (10/1/2014), http://www.eia.gov/dnav/ng/hist/rngwhhdm.htm.
[1509] See undated "Pipeline serious incident 20 year trend," PHMSA website, https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages.
[1510] See undated "Pipeline Incident 20 Year Trends, PHMSA website, http://www.phmsa.dot.gov/pipeline/library/datastatistics/pipelineincidenttrends.
[1511] See undated "Pipeline serious incident 20 year trend," PHMSA website, https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages.

includes incidents involving natural gas distribution, gathering, and transmission, as well as liquefied natural gas and other hazardous liquids.[1512]

Four years ago, the Pacific Gas & Electric Company (PG&E) experienced a "deadly" natural gas pipeline explosion in San Bruno, California.[1513] On September 9, 2010, a natural gas pipeline operated by PG&E ruptured, releasing large quantities of natural gas which ignited and started fires in the area surrounding the pipeline.[1514] As a result, eight people died, 51 people required hospitalization, and 38 homes were destroyed.[1515] According to PHMSA, the estimated property damage from the explosion was over $220 million.[1516] The California Public Utilities Commission continues to review the incident and is reportedly considering levying a $1.4 billion penalty against PG&E, which would be "the biggest safety fine in the state's history."[1517]

Natural gas storage facilities have also experienced explosions. Perhaps the worst was in 1944 in Cleveland when, as one newspaper described it, "a natural gas tank filled with over 90,000,000 cubic feet of natural gas exploded, destroying everything within a mile-radius in a wall of fire. The blaze continued uncontrolled for over nine hours."[1518]

Regulatory Framework. Natural gas facilities, including natural gas wellheads, gas fields, pipelines, gathering processes, initial treatment facilities, refineries, liquefied natural gas facilities, and compressed natural gas facilities, are heavily regulated. The Natural Gas Pipeline Safety Act, for example, authorizes the U.S. Department of Transportation (DOT) to set minimum safety requirements both for the transportation of natural gas by pipeline and for natural gas pipeline facilities.[1519] In response, DOT, through its Pipeline and Hazardous Materials Safety Administration, has promulgated an extensive set of safety regulations for pipe design, equipment maintenance, fire protection, and personnel qualifications, among other matters.[1520] Compliance with those safety regulations is overseen and enforced primarily by the states.[1521] To build and operate a natural gas facility also requires permits from the Department of Energy and the Environmental Protection Agency, among others.[1522] State agencies must also

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[1512] See undated "Pipeline Incident 20 Year Trends. PHMSA website, http://www.phmsa.dot.gov/pipeline/library/datastatistics/pipelineincidenttrends.

[1513] Undated "Pacific Gas & Electric pipeline rupture in San Bruno, CA," PHMSA website, http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/recent-incidents/sanbruno-ca/. See also "California pipeline disaster brings more scandal for PG&E." Bloomberg, Mark Chediak, (9/16/2014). http://www.bloomberg.com/news/2014-09-16/california-pipeline-disaster-brings-more-scandal-for-pg-e.html.

[1514] Undated "Pacific Gas & Electric pipeline rupture in San Bruno, CA." PHMSA website, http://opsweb.phmsa.dot.gov/pipelineforum/facts-and-stats/recent-incidents/sanbruno-ca/.

[1515] Id.

[1516] Id.

[1517] See "California pipeline disaster brings more scandal for PG&E," Bloomberg, Mark Chediak, (9/16/2014), http://www.bloomberg.com/news/2014-09-16/california-pipeline-disaster-brings-more-scandal-for-pg-e.html. Several plaintiffs have filed a civil suit against PG&E, because of the San Bruno pipeline explosion. See Bou-Salman v. PG&E Corp., Civ. No. 524283 (Cal. Super. Ct. Sept. 23, 2013).

[1518] "Cleveland East Ohio Gas Explosion," http://counterspill.org/disaster/cleveland-east-ohio-gas-explosion.

[1519] 49 U.S.C. §60102(a)(2).

[1520] See 49 C.F.R. §192.1-192.1015, 193.2001-193.2917.

[1521] See, e.g., 2014 "Get the Facts: Pipeline Safety," American Gas Association website, http://www.aga.org/Newsroom/factsheets/Documents/Pipeline%20Safety.pdf.

[1522] See 9/3/1953 Executive Order 10485, National Archives, http://www.archives.gov/federal-register/codification/executive-order/10485.html (granting the Department of Energy power to accept permit

be consulted. Under the Natural Gas Act, any entity seeking to import or export natural gas must first obtain authorization from the U.S. Department of Energy.[1523] In addition, under the Natural Gas Act, the Federal Energy Regulatory Commission oversees the construction and operation of natural gas projects, including certain pipelines and storage facilities, as well as their rates and charges.[1524]

(2) Morgan Stanley Involvement with Natural Gas

Morgan Stanley has been trading financial instruments linked to natural gas since 1989, and became involved with conducting physical natural gas activities in the 1990s. In 2010, through a Morgan Stanley investment fund, it purchased an ownership interest in a natural gas pipeline company, Southern Star, and in 2012, took full ownership of that company. In 2013, Morgan Stanley intensified it physical natural gas activities by launching a plan to build and operate a large-scale compressed natural gas facility in Texas.

(a) Trading Natural Gas

In 2013, Morgan Stanley described itself as "a significant participant in the energy markets, with substantial activity (both physical and financial)" in natural gas, among other commodities.[1525] Morgan Stanley has been trading in natural gas since 1989.[1526] Its activities in the natural gas sector have included "trading and investing in physically-settled forward contracts, options, futures, options on futures and similar contracts, both over-the-counter and exchange-listed on natural gas."[1527] Morgan Stanley has bought and sold physical natural gas[1528] as well as cargoes of liquefied natural gas (LNG)[1529] on spot markets. In addition, it has "helped domestic natural gas producers price hedge" domestic shale gas.[1530]

Natural gas trading at Morgan Stanley is conducted within the Commodities group's "North America Power/Gas Management Organization," which, in 2013, had 72 full-time employees.[1531] The Commodities group tracks revenues by desk rather than individual

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applications for natural gas facilities); see also National Environmental Policy Act of 1969, P.L. 91-190, codified at 42 U.S.C. §4321 (requiring a permit for any large environmental project that receives federal funding).

[1523] 15 U.S.C. §717b(a).

[1524] See 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, at MS-PSI-00000001 – 037, at 016; "Natural Gas." FERC website, http://www.ferc.gov/industries/gas.asp; Natural Gas Act. Sections 3 and 7.

[1525] 2/11/2013 "Morgan Stanley Commodities: Business Overview," prepared by Morgan Stanley, PSI-MorganStanley-01-000001 - 027, at 005.

[1526] 7/8/2010 letter from Morgan Stanley to Federal Reserve, FRB-PSI-200173 - 182, at 177.

[1527] Id.

[1528] See, e.g., "Deal or No Deal, Morgan Stanley Commodity Trade Shrinks," WHTC, Matthew Robinson and Scott Disavino (6/7/2012), http://whtc.com/news/articles/2012/jun/07/deal-or-no-deal-morgan-stanley-commodity-trade-shrinks/.

[1529] See, e.g., id.; "Morgan Stanley LNG traders leave for Glencore – sources," Reuters (6/6/2013), http://www.reuters.com/article/2013/06/06/morgan-lng-idUSL5N0EI0QD20130606.

[1530] 2/11/2013 "Morgan Stanley Commodities: Business Overview," prepared by Morgan Stanley, PSI-MorganStanley-01-000001 - 027, at 010.

[1531] Id. at 021. This organization is also referred by other, similar names. See, e.g., 1/9/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley, FRB-PSI-624436 - 508, at 450 (referring to a "North American Electricity/Natural Gas" desk).

commodity and does not break out financial activities from physical activities.[1532] The following table shows the net revenues from the desk that handles both electricity and natural gas financial and physical activities, indicating that, while substantial, those revenues have declined by two-thirds from 2008 to 2012:

Morgan Stanley Natural Gas and Electricity Net Revenues 2008-2012

Year	2008	2009	2010	2011	2012
North American Power & Gas	$382 million	$239 million	$384 million	$280 million	$335 million
Asian Pacific-European Power & Gas	$539 million	$293 million	$179 million	$112 million	-$21 million
Total	$921 million	$532 million	$563 million	$392 million	$314 million

Source: 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-02-000002.

On August 15, 2014, Morgan Stanley expanded its natural gas activities by purchasing a portfolio of North American natural gas assets from Deutsche Bank.[1533] According to Morgan Stanley, the portfolio consisted of "listed commodity futures contracts and options on commodity futures contracts; cash-settled over-the-counter swap and swap option agreements; and physical forward agreements."[1534] It stated that no physical commodity infrastructure assets were part of the transaction.[1535] In addition, Morgan Stanley noted that, of the "13,200 discrete transactions … only 24 were physically-settled forward contracts"; the rest were financially-settled.[1536] Morgan Stanley noted that the delivery dates for those transactions ranged from 2014 to 2017.[1537]

(b) Planning to Construct a Compressed Natural Gas Facility

In 2013, in a major expansion of its physical natural gas activities, Morgan Stanley Commodities launched an effort to construct a $355 million compressed natural gas (CNG) facility in Texas, using shell corporations run by Morgan Stanley personnel.[1538] The objective was to construct the facility, initiate large-scale compressed natural gas operations, and sell the containerized gas, primarily by exporting it to countries in Central America and the Caribbean.

[1532] 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-02-000001 - 004, at 002.

[1533] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 002.

[1534] Id.

[1535] Id. Deutsche Bank originally entered into these transactions with "five middle-market Canadian gas marketers and Natural Gas Exchange, Inc., as counterparties."

[1536] Id. Morgan Stanley purchased 22 fixed price natural gas forward agreements and 2 basis transactions. Morgan Stanley also entered into a swap agreement with the three Deutsche Bank entities. Under the terms of that agreement Morgan Stanley "agreed to take both the future commodity price and credit risk of the [Deutsche Bank] contracts being sold."

[1537] Id.

[1538] Id. at 008.

Compressed natural gas (CNG) is natural gas stored at high pressure in containers of various sizes.[1539] CNG has most often been used to power vehicles.[1540] CNG has also been viewed as a way to export natural gas, providing an alternative to Liquefied Natural Gas (LNG), although no large-scale CNG exporting operations currently exist in the United States.[1541] In November 2013, Emera CNG, LLC, a Canadian energy company, filed the first application submitted to DOE to export CNG on a large scale; portions of that application are still under DOE consideration.[1542] Also in 2013, the United States approved construction of a $10 billion LNG facility at Quintana Island, Texas, known as the "Freeport LNG Project," to export natural gas in liquefied form.[1543] Morgan Stanley launched its CNG project around the same time, seeking to establish a CNG facility in the same general vicinity as the Freeport LNG Project.

Morgan Stanley claimed that it could engage in this new activity under the Gramm-Leach-Bliley grandfather clause, even though it had never before built or run a CNG facility. Morgan Stanley reasoned that it could act under the grandfather clause because it had long dealt with natural gas that is pressurized when it moves through natural gas pipelines, including pipelines operated by its TransMontaigne subsidiary, even though a plant designed to produce massive amounts of natural gas for export would require more intensive pressure on a much larger scale.[1544] Morgan Stanley told the Subcommittee that it also had experience building complex energy facilities, pointing, for example, to its 2000 construction of a 360 megawatt electrical plant in Nevada known as the Naniwa power plant.[1545]

The Federal Reserve told the Subcommittee that when it inquired about the project, Morgan Stanley explained that it had decided to construct the CNG facility because it saw a "market opportunity."[1546] According to the Wentworth application, Morgan Stanley's primary target market is Central American and Caribbean countries that have no existing natural gas pipelines, and where Morgan Stanley believes CNG can be delivered at a relatively low price.[1547] In a letter to the Subcommittee, Morgan Stanley wrote that "the CNG business is being developed in order to deliver a cheap and cleaner source of fuel to power generators and other commercial end users who need access to reliable natural gas supplies ... [and to] assure long

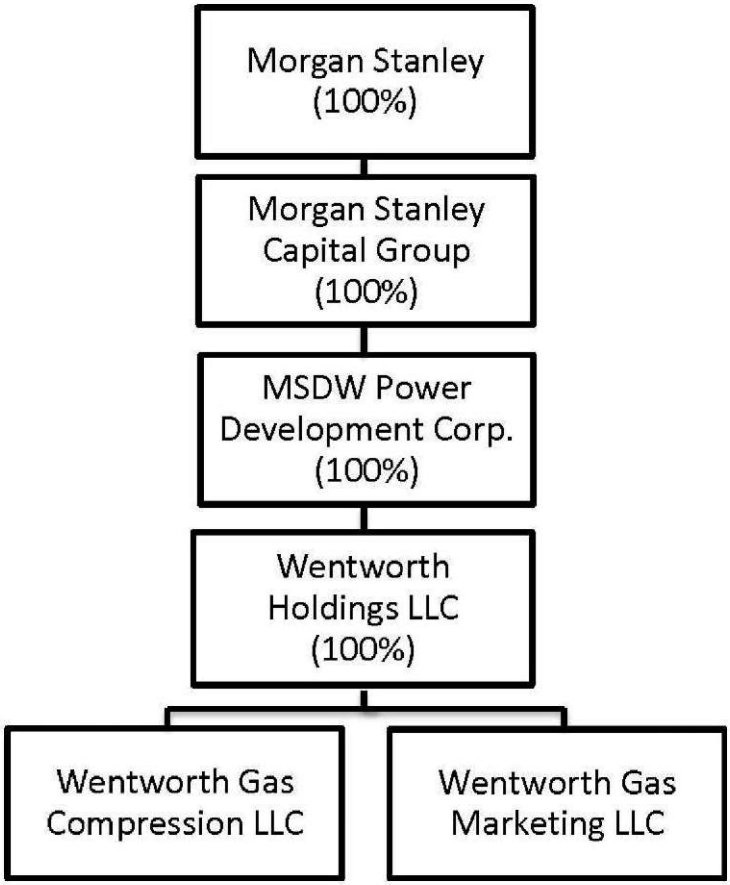
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[1539] See undated "Natural Gas Fuel Basics," DOE website, http://www.afdc.energy.gov/fuels/natural_gas_basics.html.
[1540] Id.
[1541] Subcommittee briefing by the U.S. Department of Energy (10/14/2014).
[1542] Id.; 11/20/2013 "Application of Emera CNG LLC for Long-Term Multi-Contract Authorization to Export Compressed Natural Gas," Docket No. 13-157-CNG," filed by Emera CNG, LLC, http://www.fossil.energy.gov/programs/gasregulation/authorizations/2013_applications/13_157_cng.pdf. See also "Two new natural gas export plans set up challenge to controversial policy." Platts, Brian Scheid (12/27/2013), http://blogs.platts.com/2013/12/27/lng-2projects/.
[1543] "Energy Department authorizes additional volume at proposed Freeport LNG facility to export liquefied natural gas," (11/15/2013), http://energy.gov/articles/energy-department-authorizes-additional-volume-proposed-freeport-lng-facility-export. See also, e.g., "U.S. Approves Expanded Gas Exports," Wall Street Journal, Keith Johnson and Ben Lefebvre (5/18/2013), http://online.wsj.com/news/articles/SB10001424127887324767004578489130300876450.
[1544] See undated document, "Draft Talking Points Regarding Commodities Plans to Sell and Export Compressed Natural Gas," prepared by Morgan Stanley, PSI-MorganStanley-000001 - 043, at 042 - 043.
[1545] Subcommittee briefing by Morgan Stanley (11/18/2014).
[1546] Subcommittee briefing by Federal Reserve, (9/19/2014).
[1547] Id.

term delivery of this fuel source."[1548] Morgan Stanley indicated that the new facility would deliver CNG to both domestic and foreign clients.[1549]

Forming Shell Corporations. To conduct work on the CNG project, on October 21, 2013, Morgan Stanley, through its key commodities subsidiary, Morgan Stanley Capital Group, formed two wholly-owned shell companies in Delaware, Wentworth Compression LLC and Wentworth Gas Marketing LLC.[1550] Seven months later, on April 1, 2014, Morgan Stanley incorporated a third wholly-owned shell company in Delaware, Wentworth Holdings LLC, and transferred to it the stock of the two earlier companies, so that they became its wholly-owned subsidiaries. The current Wentworth ownership structure is as follows:

Wentworth Ownership Structure



Source: 9/19/2014 letter from Morgan Stanley to Subcommittee, at PSI-MorganStanley-13-000004.

[1548] 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 008.
[1549] Subcommittee briefing by the Federal Reserve, (9/19/2014).
[1550] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 – 009, at 003. See also the incorporation papers for the three Wentworth entities, MS-COM-0001 - 006.

Morgan Stanley told the Subcommittee that none of the three Wentworth companies has any employees of its own "at present."[1551] Instead, all three companies "rely upon the expertise and day-to-day involvement of employees of Morgan Stanley" to carry out their activities.[1552] According to Morgan Stanley, the Wentworth companies utilize "the breadth of the firm, including support in legal, tax, risk management and many other areas."[1553]

In addition to relying on Morgan Stanley employees for day-to-day operations, the three Wentworth companies rely on Morgan Stanley Commodities executives for their leadership.[1554] All three Wentworth companies list the same Board members, officers, and managers. The President and Manager of each company is Simon Greenshields, Global Co-Head of Morgan Stanley Commodities. The companies also have the same three Vice-Presidents and Managers: Nancy King, Global Head of Oil Liquids Flow; Peter Sherk, Head of North American Power and Gas; and Deborah Hart, Chief Operating Officer of North American Power and Gas.[1555] Each of these individuals is formally employed by Morgan Stanley Capital Group (MSCG) and works for the Morgan Stanley Commodities group.[1556] In a letter to the Subcommittee, Morgan Stanley stated that "strategic management and operational decision-making at the Wentworth entities ... is made by MSCG [Morgan Stanley Capital Group] employees."[1557]

In addition to relying on Morgan Stanley for its leadership and employees, the three Wentworth companies rely on it for office space. Morgan Stanley told the Subcommittee that none of the Wentworth companies has its own office. Instead, the Wentworth companies have designated as their place of business the same building used by Morgan Stanley Commodities in Purchase, New York.[1558] As Morgan Stanley put it: "the principal administrative business for each of the Wentworth entities is conducted within the Commodities group at Morgan Stanley's offices located in Purchase, NY."[1559]

Morgan Stanley told the Subcommittee that it formed the Wentworth entities for the sole purpose of acting as the owner and operator of the CNG facility and to market the containerized gas. When asked for the origin of the name, Morgan Stanley explained that "in the early phases of the project," it had considered locating the CNG facility in the City of Port Wentworth, near the Port of Savannah in Georgia, but later decided to develop the Texas site first.[1560]

Constructing the CNG Facility. Morgan Stanley has expended substantial resources on the CNG project to date. Among other steps, it has entered into an Engineering, Procurement,

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[1551] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 005.
[1552] Id. at 008.
[1553] Id.
[1554] Id. at 005.
[1555] Id.
[1556] Id.
[1557] Id. at 006.
[1558] See, e.g., In re Wentworth Gas Marketing LLC, FE Docket No. 14-63-CNG, "Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas," (5/13/2014), at 3, http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf (listing the Purchase, New York address as the "principal place of business" of Wentworth Gas Marketing LLC and Wentworth Compression LLC).
[1559] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001-009.
[1560] Id. at 004.

and Construction Agreement with H.P. Industries to design and build the CNG facility.[1561] H.P. Industries, in turn, has contracted with a third party for the facility design.[1562] Morgan Stanley has selected a possible site for the facility, 50 acres known as Parcel 19, which is owned by the Port of Freeport in Texas.[1563] H.P. Industries has entered into an access agreement to inspect the site,[1564] and has hired a professional consulting firm to provide a required site assessment.[1565] H.P. Industries has also commenced a "Phase I environmental review."[1566] H.P. Industries has also placed an order for the facility compressors, since they require lead time to procure.[1567]

Morgan Stanley told the Subcommittee it is currently negotiating a lease with Port Freeport and working to obtain electrical and natural gas pipeline connections for the site.[1568] Morgan Stanley indicated that it had also evaluated potential insurance, but did not plan to obtain actual insurance until the facility begins construction.[1569]

In May 2014, Morgan Stanley filed an application with the Department of Energy's Office of Fossil Energy seeking "long-term authorization" to export containerized gas.[1570] The application was filed in the name of Wentworth Gas Marketing LLC, and sought authority to export 60 billion cubic feet of CNG annually for a 20-year period.[1571] It requested authorization to "export CNG using intermodal transportation containers via truck and ocean-going carrier" to any country with which the United States has a Free Trade Agreement.[1572] The application explained that Wentworth planned to move CNG from Parcel 19 "via truck approximately one mile to the Port of Freeport," where it would then be "shipped on vessels charted by Wentworth Gas to various destinations."[1573] The application also indicated that, "in the near term," it planned to sell CNG to countries in Central America and the Caribbean.[1574] The Department of Energy granted Wentworth authorization to export CNG in October 2014.[1575]

[1561] Id. at 006.
[1562] Id.
[1563] See In re Wentworth Gas Marketing LLC, FE Docket No. 14-63-CNG, "Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas," (5/13/2014), at 4, http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf .
[1564] See 5/12/2014 "Access Agreement," between H.P. Industries LLC and Port Freeport, attached as Appendix C to "Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas," (5/13/2014), filed with the U.S. Department of Energy in In re Wentworth Gas Marketing LLC, FE Docket No. 14-63-CNG, http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf.
[1565] Id.
[1566] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-13-000001 – 009, at 006.
[1567] Id.
[1568] Id.
[1569] Id. at 007.
[1570] See In re Wentworth Gas Marketing LLC, FE Docket No. 14-63-CNG, "Application of Wentworth Gas Marketing LLC for Long-Term Authorization to Export Compressed Natural Gas," (5/13/2014), http://energy.gov/sites/prod/files/2014/06/f16/14_63_cng_tracy.pdf.
[1571] Id. at 1.
[1572] Id.
[1573] Id. at 4.
[1574] Id. at 2.
[1575] See In re Wentworth Gas Marketing LLC, FE Docket No. 14-63-CNG, "Order Granting Long-term Authorization to Export Compressed Natural Gas by Vessel From a Proposed CNG Compression and Loading Facility at the Port of Freeport, Texas, to Free Trade Agreement Nations," (10/7/2014), http://energy.gov/sites/prod/files/2014/10/f18/ord3515.pdf.

Morgan Stanley estimated the total construction cost for the CNG facility at up to $55 million.[1576] It indicated that fabrication of the natural gas shipping containers would require an "initial investment of up to $300 million."[1577] Morgan Stanley projected that a second facility in Georgia would have an "equivalent" cost of $55 million.[1578] Shipping containers for that second facility would be an additional expense.

Morgan Stanley's plans to build CNG facilities were not widely known until its DOE application for export authority was made public and became the subject of a news report.[1579] Some media reports described the effort to set up a large-scale CNG export operation as unusual.[1580] Others noted that the Morgan Stanley proposal to export 60 billion cubic feet per year far exceeded the earlier Emera proposal to export 9 billion cubic feet.[1581] Some negative reactions to the proposal also suggested it may be controversial, with opposition focused primarily on exporting large amounts of low-cost domestic natural gas to other countries.[1582]

Informing the Federal Reserve. Federal Reserve personnel in Washington, D.C. told the Subcommittee that they first became aware of the Morgan Stanley CNG project when it was disclosed in the August 2014 media report, nearly a year after Morgan Stanley had begun work on it.[1583] Morgan Stanley told the Subcommittee that it provided "an initial, oral notice" of the project to the Federal Reserve Bank of New York (FRBNY) in November 2013, and provided detailed information in May 2014, in response to a FRBNY request for information about its grandfather activities.[1584] The Federal Reserve told the Subcommittee that its personnel received the information in May 2014, but did not focus on the Wentworth project prior to the news report.[1585] The Federal Reserve also told the Subcommittee that it was still analyzing the CNG

[1576] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee. at PSI-MorganStanley-13-000001 – 009, at 008.
[1577] Id.
[1578] Id. at 007.
[1579] See "Morgan Stanley plans natural gas export plant in new commodities foray." Reuters, Anna Louie Sussman (8/29/2014), http://www.reuters.com/article/2014/08/29/us-morganstanley-naturalgas-idUSKBN0GT0B320140829.
[1580] See, e.g., "Morgan Stanley Forays Into Natural Gas Commodities," Stocks.org, Jennifer Zhang (8/29/14), http://stocks.org/energy-solar/morgan-stanley-nysems-forays-into-natural-gas-commodities/25180/ ("There has not been another project like this in the industry."); "Morgan Stanley subsidiary plans $30 million – $50 million Texas maritime CNG export facility," NGV Today (9/3/2014). http://ngvtoday.org/2014/09/03/morgan-stanley-subsidiary-plans-30-million-50-million-texas-maritime-cng-export-facility/ (indicating an energy expert describing it as "one of the first such CNG export projects he was aware of").
[1581] "Morgan Stanley Forays Into Natural Gas Commodities," Stocks.org, Jennifer Zhang (8/29/14), http://stocks.org/energy-solar/morgan-stanley-nysems-forays-into-natural-gas-commodities/25180/. See also "Morgan Stanley subsidiary plans $30 million – $50 million Texas maritime CNG export facility," NGV Today (9/3/2014), http://ngvtoday.org/2014/09/03/morgan-stanley-subsidiary-plans-30-million-50-million-texas-maritime-cng-export-facility/.
[1582] See, e.g., discussion about the Morgan Stanley CNG proposal on CNGchat.com, http://www.cngchat.com/forum/showthread.php?12170-Morgan-Stanley-Wentworth-Gas-Marketing-plan-30-to-50M-EXPORT-plant-at-Freeport-TX.
[1583] Subcommittee briefing by the Federal Reserve (9/19/2014).
[1584] 11/18/2014 Morgan Stanley letter to Subcommittee, PSI-MorganStanley-25-000001 - 008, at 003; 5/19/2014 letter from Morgan Stanley to FRBNY, PSI-MorganStanley-26-000005 - 044.
[1585] Subcommittee briefing by the Federal Reserve (9/19/2014).

project to determine whether it was an appropriate use of the Gramm-Leach-Bliley grandfathering authority.[1586]

When the Subcommittee spoke with the Federal Reserve about the project, the Federal Reserve representatives indicated they had been under the impression that Morgan Stanley had acquired the Wentworth companies as unrelated, pre-existing businesses; the Federal Reserve indicated that it had not been aware, until informed by the Subcommittee, that the Wentworth companies were shell corporations formed and run by Morgan Stanley employees.[1587] When asked, the Federal Reserve representatives indicated that they were unaware of any other instance in which a financial holding company had formed shell corporations and then used them to build an industrial facility to handle physical commodity activities.[1588]

(c) Investing in a Natural Gas Pipeline Company

Over the past decade, in addition to trading natural gas financial instruments and launching the CNG construction project, Morgan Stanley has used its merchant banking authority to invest in an array of physical natural gas businesses, including a large natural gas pipeline company in the Midwest known as Southern Star. Morgan Stanley's investment in Southern Star is through an investment fund called Morgan Stanley Infrastructures Partners LP, which is located within Morgan Stanley's Merchant Banking & Real Estate Investing group and is administered, advised, and overseen by Morgan Stanley personnel.

Morgan Stanley Infrastructure Partnership. Although Morgan Stanley portrays Southern Star as owned by an investment fund in which Morgan Stanley holds only a minority interest, that investment fund, Morgan Stanley Infrastructure Partners LP (MSIP), is intimately connected to Morgan Stanley. MSIP was established by Morgan Stanley in 2007, and is managed by Morgan Stanley employees operating out of Morgan Stanley offices.[1589] Morgan Stanley was the largest investor in MSIP's initial infrastructure fund, supplying $430 million. MSIP owns 100% of Southern Star.

Although MSIP is controlled by Morgan Stanley, it has a complex ownership structure that reflects different groups of investors and projects. At the apex of the ownership structure is Morgan Stanley. In the next tier is MS Holdings, Inc., which is wholly owned by Morgan Stanley.[1590] MS Holdings, in turn, owns 100% of Morgan Stanley Infrastructure, Inc. (MSI).[1591] MSI is the manager of MSIP.[1592] MSI is also a business unit within Morgan Stanley's Merchant Banking & Real Estate Investing group.[1593] MSI currently has 37 employees, all of whom are

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[1586] Id.
[1587] Id.
[1588] Id.
[1589] See 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006; 10/24/2014 "Morgan Stanley Infrastructure Partners Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 458; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley, FRB-PSI-400321 - 382, at 326.
[1590] See 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 456.
[1591] Id.
[1592] Id. See also 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, FRB-PSI-00000001 - 037, at 002.
[1593] Id. at 005.

Morgan Stanley employees in the Merchant Banking & Real Estate Investing group and work exclusively on MSIP infrastructure projects.[1594]

The remaining layers of MSIP's ownership structure grow increasingly complex. Virtually all of the remaining entities are shell entities with no employees or offices of their own. One key entity is Morgan Stanley Infrastructure GP LP (MSIGP), which is the general partner of MSIP. MSIGP is a shell entity with no employees of its own. Its general partner is MSI, and MSI employees actually administer MSIGP, meaning that, on a practical level, MSI manages MSIP.[1595] Also included within the ownership structure are multiple limited partnerships and "feeder vehicles" that group together certain types of investors and "feed" their investment dollars to MSIP and its infrastructure projects. The following graphic depicts MSIP's full ownership structure:

[1594] Id. at 008; Subcommittee briefing by Morgan Stanley (9/8/2014).

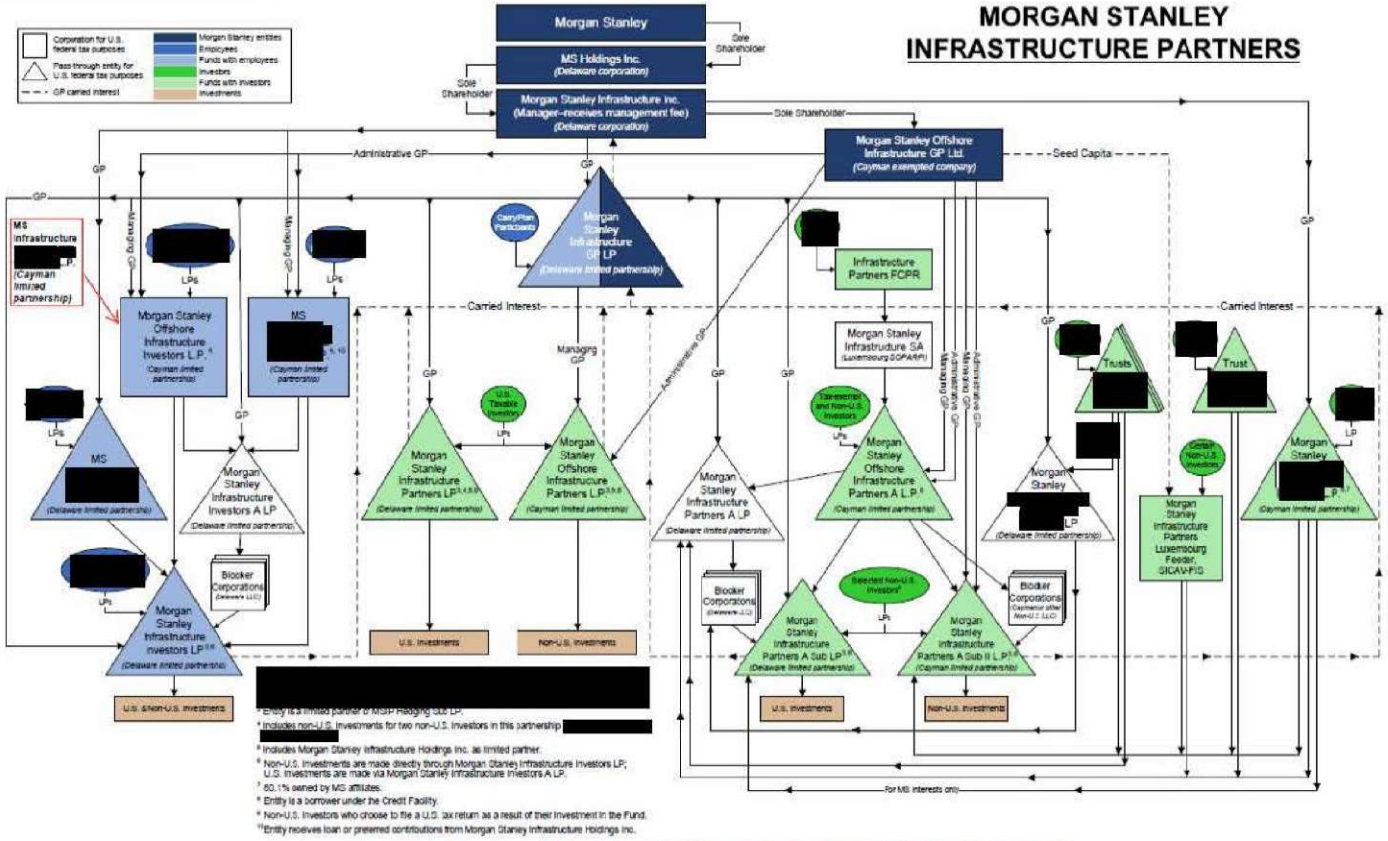
[1595] See 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 457; 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 002 and 006.

Confidential Treatment Requested by Morgan Stanley

Question 1:
Complete ownership structure chart for MSIP, including all funds that feed into the master limited partnerships for MSIP I and all MS Ownership interests.

RESPONSES TO QUESTIONS

Answer to Question 1



Morgan Stanley

Contains Competitively Sensitive Information

2

Source: Chart included in 10/24/14 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, at MS-PSI-00000456.

MSIP Investments. MSIP is a closed investment fund with a 15-year term ending in 2022.[1596] MSIP raised about $4 billion for its investments, most of which are ongoing.[1597] To find investors, MSI "utilize[d] Morgan Stanley's institutional and wealth management distribution networks … work[ing] through three sales channels."[1598] According to Morgan Stanley, investors contributed about $3.6 billion or nearly 90% of MSIP's investment capital.[1599] Those investors included pension funds, financial institutions, corporations, endowment funds, high net worth individuals, and some Morgan Stanley employees.[1600] The remaining 10.74% of MSIP's investment capital, about $430 million, came from Morgan Stanley, its single largest investor.[1601]

MSIP has been profitable, with a gross internal rate of return of about 12%.[1602] According to Morgan Stanley, MSIP has several categories of investments including "Energy and Utilities (oil and gas pipelines, regulated electricity assets, transmission and distribution systems, and water distribution and treatment)."[1603] Out of a list of 16 MSIP investments provided by Morgan Stanley to the Federal Reserve, eight involved physical commodity activities.[1604] They included an electricity, heating, and cooling facility in the United States; a large electricity distributor in Chile; a natural gas distribution company in Spain; hydropower plants in China; and a wind power developer and operator in India.[1605] As of March 31, 2013, Southern Star was MSIP's largest single investment.[1606]

Southern Star. MSIP owns 100% of Southern Star Central Corp., the parent company of Southern Star Central Gas Pipeline Inc., its wholly owned subsidiary.[1607] MSIP purchased 40% of Southern Star's shares in 2010, and acquired the remaining 60% in 2012.[1608] Morgan

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[1596] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 012; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 332.

[1597] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009; 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 332, 381.

[1598] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 351.

[1599] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 006 and 009.

[1600] Id. at 009; Subcommittee briefing by Morgan Stanley (9/8/2014).

[1601] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009, footnote 1.

[1602] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 336.

[1603] Id. at 327.

[1604] Id. at 333.

[1605] Id. See also 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 467; Morgan Stanley Infrastructure Partners website, http://www.morganstanley.com/infrastructure/portfolio.html.

[1606] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 336.

[1607] See 8/23/2012 Morgan Stanley press release, "Morgan Stanley Infrastructure Partners acquires full ownership of Southern Star Central Corp.," http://www.morganstanley.com/about/press/articles/e5a5716e-8ff9-4b44-b073-ba6255f5b077.html.

[1608] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 003; Morgan Stanley corporate website, http://www.morganstanley.com/infrastructure/portfolio.html; 8/23/2012 Morgan Stanley press release, "Morgan Stanley Infrastructure Partners acquires full ownership of Southern Star Central Corp.," http://www.morganstanley.com/about/press/articles/e5a5716e-8ff9-4b44-b073-ba6255f5b077.html. MSIP acquired the remaining shares from GE Energy Financial Services, Inc. (GE), which resulted in a change in control for

Stanley relied on the Gramm-Leach-Bliley merchant banking authority to buy the company and, under the statutory requirements, generally must sell the company within ten years, by 2020.[1609]

Southern Star was founded in 1904, and is headquartered in Owensboro, Kentucky.[1610] It "is the primary gas transmission and natural gas storage facility provider" in certain areas of the Midwest, with approximately 6,000 miles of pipeline serving Colorado, Kansas, Missouri, Oklahoma, Texas, and Wyoming.[1611] Its pipeline system has a delivery capacity of approximately 2.4 billion cubic feet (Bcf) of natural gas per day, and its primary function is delivering gas to local natural gas distributors in its service areas.[1612] Southern Star serves a number of metropolitan areas including St. Louis, Kansas City, and Joplin in Missouri, and Kansas City, Wichita, Topeka, and Lawrence in Kansas.[1613]

Southern Star operates eight underground natural gas storage fields: seven in Kansas and one in Oklahoma.[1614] The fields have a "natural gas storage capacity of approximately 47 Bcf and aggregate delivery capacity of approximately 1.3 Bcf of natural gas per day."[1615] Southern Star also has transportation contracts with 127 natural gas shippers, which include:

> "regulated natural gas distribution companies, municipalities, intrastate pipelines, direct industrial users, electrical generators, gas marketers and producers. Central transports natural gas to approximately 528 delivery points, including natural gas distribution companies and municipalities, power plants, interstate and intrastate pipelines, and large and small industrial and commercial customers."[1616]

In addition, Southern Star has 41 compressor stations to facilitate natural gas transport.[1617]

Southern Star Ownership. As indicated earlier, Southern Star is wholly owned by Morgan Stanley Infrastructure Partners LP (MSIP), an investment fund that is administered, advised, and controlled by Morgan Stanley personnel. According to Morgan Stanley, MSIP uses a "typical Holding Company, Operating Company ownership structure commonly used for regulated pipelines" under oversight of the Federal Energy Regulatory Commission.[1618]

Southern Star. See Southern Star Central Corp. 10-Q, 09/30/2013, at 8, http://www.sec.gov/Archives/edgar/data/1260349/000126034913000016/southernstar10q9302013r189.pdf.

[1609] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 014.

[1610] See undated "About Southern Star," Southern Star website, http://www.sscgp.com/about-southern-star/.

[1611] Southern Star Central Corp. Form 10-Q for fiscal year ending 6/30/2014, SEC website, at 8, http://www.sec.gov/Archives/edgar/data/1260349/000126034914000020/southernstar10q6302014doc.htm. See also "About Southern Star," Southern Star website, http://www.sscgp.com/about-southern-star/.

[1612] Southern Star Central Corp. Form 10-Q for fiscal year ending 6/30/2014, SEC website, at 8, http://www.sec.gov/Archives/edgar/data/1260349/000126034914000020/southernstar10q6302014doc.htm.

[1613] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 016.

[1614] Southern Star Central Corp. 10-K, 12/31/2013, at 2, http://www.sec.gov/Archives/edgar/data/1260349/000126034914000002/southernstar201310kdoc.htm.

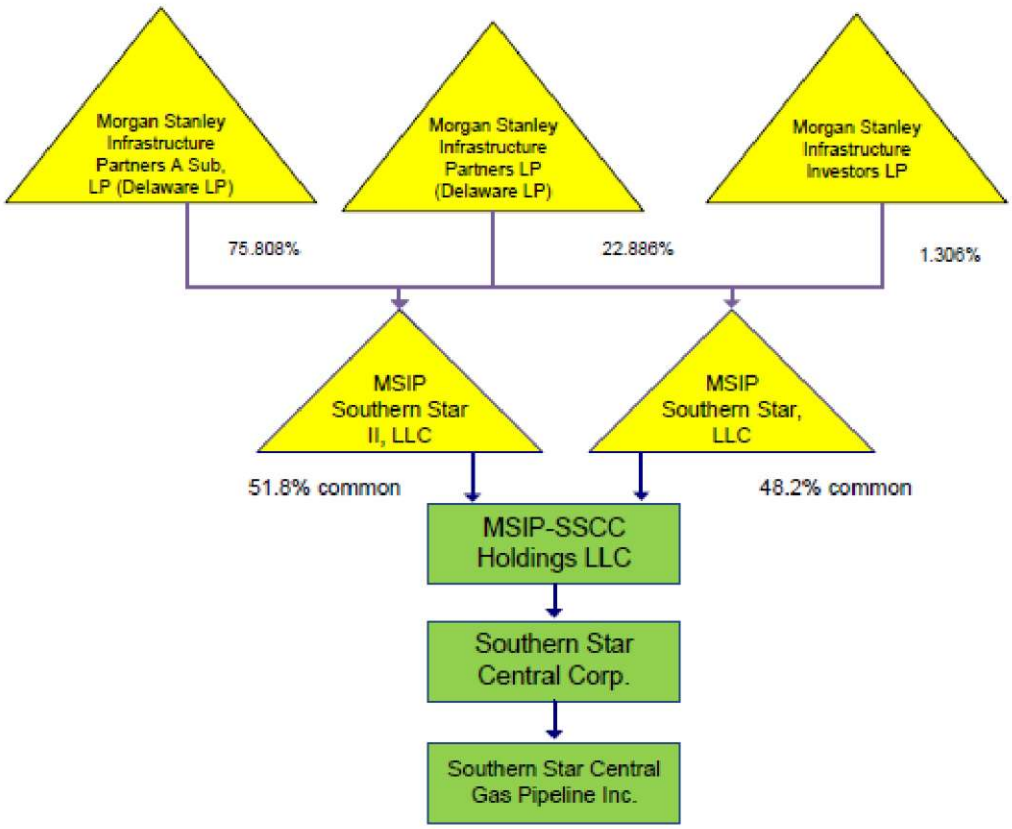
[1615] Id.

[1616] Id.

[1617] 8/29/2014 "Morgan Stanley Infrastructure Partners: Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 016. According to Southern Star, it is not involved with natural gas production, refining, or liquefied natural gas. Id. at 019.

[1618] 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," MS-PSI-00000001 - 037, at 003.

According to Morgan Stanley, MSI, which manages MSIP, "formed two intermediate holding companies: MSIP Southern Star, LLC (March 2010) and MSIP Southern Star II, LLC (September 2012) to acquire and hold" MSIP's ownership interests in Southern Star.[1619] Those two intermediate holding companies wholly own MSIP-SSCC Holdings LLC (MSIP-SSCC), which, in turn, owns Southern Star's parent corporation.[1620] The following graphic is a simplification of Southern Star's ownership structure:



Source: 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, at FRB-PSI-00000004.

The two intermediate holding companies are ultimately owned by MSIP, through the complex ownership structure of limited partnerships and feeder vehicles indicated earlier. The three entities depicted in the graphic above represent the 380 global investors that have invested in MSIP.[1621] Morgan Stanley told the Subcommittee that, as a result of the MSIP ownership structure, it ultimately holds a 10.74% indirect ownership interest in Southern Star.[1622]

[1619] Id.

[1620] Id.

[1621] Subcommittee briefing by Morgan Stanley (9/8/2014). Morgan Stanley explained that Morgan Stanley Infrastructure Partners A Sub, LP is the feeder vehicle used by foreign investors; Morgan Stanley Infrastructure Partners LP is the feeder vehicle used by domestic investors; and Morgan Stanley Infrastructure Investors LP is the feeder vehicle used by Morgan Stanley employees, including former employees. Id.

[1622] 8/29/2014 "Morgan Stanley Infrastructure Partners Overview of Southern Star," MS-PSI-00000001 - 037, at 002. Morgan Stanley told the Subcommittee that the Volcker Rule requires it to reduce its holdings in investment funds to 3%, but asserted that MSIP was covered by an exception for illiquid funds. Subcommittee briefing by Morgan Stanley (9/8/2014).

Board of Directors. The Southern Star Board of Directors consists of three MSI senior executives who are also Morgan Stanley employees.[1623] The Board meets quarterly and reviews information on Southern Star's financial performance, business activities and development projects, volume throughput, compliance issues, environmental issues, and capital spending plans, among other issues.[1624] When asked by the Subcommittee if Southern Star's Board presentations were ever given to the Morgan Stanley Commodities group, several MSIP representatives said "absolutely not."[1625]

In addition to Board meetings, Morgan Stanley indicated that monthly meetings were held between Southern Star and MSI personnel to discuss business activities.[1626] Morgan Stanley representatives told the Subcommittee that while its employees worked with Southern Star management, they were aware that, under the merchant banking statutory restrictions, Morgan Stanley was prohibited from becoming involved in the company's day-to-day operations.[1627] At the same time, Morgan Stanley indicated that its employees had reviewed Southern Star's vendors, performed counterparty assessments, utilized Morgan Stanley's legal and insurance expertise to assist Southern Star, and exercised oversight over pipeline safety issues.[1628] In 2010, the Board of Directors, which consists of Morgan Stanley employees, directed Southern Star to create a Chief Compliance Officer position to oversee pipeline integrity, safety issues, and regulatory compliance.[1629]

Incidents. As a natural gas business, Southern Star faces a range of operational risks, including pipeline ruptures, natural gas leaks, and damages caused by natural disasters like tornadoes or earthquakes. According to Morgan Stanley, Southern Star has "a strong safety and environmental record," with no material incidents over the past ten years.[1630]

According to documents found on the website of the National Transportation Safety Board (NTSB), prior to Morgan Stanley's acquisition of the company, one of Southern Star's pipelines was ruptured in 2006, by an unrelated contractor doing work for a third party.[1631] The accident occurred on September 29, 2006, in Mound Valley, Kansas. According to the NTSB materials, Double M Construction Company was doing trenching work for a natural gas well project.[1632] While trenching, an operator of Double M struck Southern Star's underground pipeline, which ran through the property. The ruptured pipeline leaked gas, which then came into contact with the running trenching machine and caused a large explosion and fire. One

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[1623] 8/29/2014 "Morgan Stanley Infrastructure Partners Overview of Southern Star," MS-PSI-00000001 - 037, at 023.
[1624] Id.
[1625] Subcommittee briefing by Morgan Stanley (9/8/2014).
[1626] Id.
[1627] Id.
[1628] Id.
[1629] Id.
[1630] 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 026.
[1631] U.S. Department of Transportation, "Incident report – gas transmission and gathering systems, Southern Star gas pipeline," (10/11/2006), PSI-USDOTIncidentRpt_Oct06-000001. See also "Kansas State Fire Marshal Department Fire Investigation Summary Report," (12/12/2006), Case No. 24731, PSI-KSFireMarRpt_Nov06-000001 - 024, at 001-003. See also "Kansas Corporation Commission Report and Recommendation in the matter of the investigation of Double M Construction, Inc.," Docket no. 07-MMCP-469-SHO, (11/13/2006), PSI-KSFireMarRpt_Nov06-000001 - 024, at 013-024.
[1632] Id. The owner of the natural gas well project was Admiral Bay Resources, Inc., which had contracted with Double J Construction Company, who in turn had subcontracted with Double M Construction to do the trenching.

Double M Construction employee died, and there was substantial property damage.[1633] The Kansas State Fire Marshal determined that Southern Star was aware of the illegal trenching near its underground pipeline before the accident occurred, but did not report it.[1634] When asked why, Southern Star stated that it did not have an obligation to report the conduct under Kansas law, which the Fire Marshal determined to be true.[1635] No government agency assessed a penalty against Southern Star in connection with the incident. Southern Star was named as a defendant in a wrongful death case filed against Double J Pipeline Construction, which was settled in 2009, in part with a payment from Southern Star's insurance policy.[1636]

Southern Star's pipeline infrastructure has also suffered damage due to natural disasters. In May 2013, Southern Star reported damage to its pipelines in Cement, Oklahoma, after a tornado hit the town.[1637]

Morgan Stanley told the Subcommittee that insurance experts within the Merchant Banking and Real Estate Investment group have met with Southern Star to discuss the adequacy and pricing of insurance policies, and helped Southern Star obtain a comprehensive insurance program.[1638] Its policies include insurance protecting against pollution incidents, well issues, property damage, damage from sabotage or terrorism, business interruption, and commercial crime, as well as directors' and officers' liability.[1639]

Morgan Stanley-Southern Star Relationship. Morgan Stanley told the Subcommittee that it had a classic merchant banking relationship with Southern Star, in which it oversaw its overall business but did not participate in its day-to-day operations.[1640] In response to questions, Morgan Stanley said that it was not Southern Star's primary banker and did not loan it money.[1641] Morgan Stanley indicated that it also did not perform any natural gas trading activities on behalf of Southern Star.[1642] In addition, according to Morgan Stanley, Southern Star did not provide physical natural gas or related services to Morgan Stanley, including the Morgan Stanley Commodities group.[1643] Morgan Stanley told the Subcommittee that information from Southern Star was shared with MSI employees in the Merchant Banking and Real Estate Investment Group, but not with anyone in the Morgan Stanley Commodities group.[1644]

[1633] Id. Double M Construction was found to have been trenching illegally under Kansas law, because it did not follow certain protocols. The Kansas State Fire Marshal Department provided a report that concluded the incident was an accident, and there was no intentionally malicious conduct that led to the explosion. Id.
[1634] Id.
[1635] Id.
[1636] See Foran vs. Double J Pipeline Construction, L.L.C., et al., Docket No. CJ-2007-29 (USDC D. Okla.), "Order Approving Settlement" (7/31/2009); 10/24/2014 "Morgan Stanley Infrastructure Partners[:] Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 473 [sealed exhibit].
[1637] See "Energy infrastructure largely spared Oklahoma tornado's fury," Reuters, (5/21/2013), http://www.reuters.com/article/2013/05/21/us-usa-tornadoes-energy-idUSBRE94K0Q920130521.
[1638] Subcommittee briefing by Morgan Stanley (9/8/2014). See also 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 032.
[1639] 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 032.
[1640] Subcommittee briefing by Morgan Stanley (9/8/2014).
[1641] Id.
[1642] 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 036.
[1643] Id. at 025.
[1644] Subcommittee briefing by Morgan Stanley (9/8/2014).

MSIP II. Morgan Stanley noted that MSI was sponsoring a second infrastructure investment fund, MSIP II, which was in the process of raising another $4 billion and would concentrate on energy, utility, and transportation projects.[1645] Morgan Stanley told the Federal Reserve that it expected "energy-related infrastructure will constitute a majority of the deal flow in MSIP II."[1646] It identified possible "Americas" investments in "[s]hale oil opportunities," natural gas gathering, processing, storage and LNG facilities; natural gas fired turbines; and wind and solar activities.[1647] Morgan Stanley also indicated that "MSI officers will invest $25 million in MSIP II," to align their interests with those of investors.[1648] MSIP II has raised about $1.5 billion as of late 2014.[1649] The plans for MSIP II indicate that Morgan Stanley intends to continue to invest billions of dollars in natural gas and other commodity-related businesses for years to come.

(d) Investing in Other Natural Gas Facilities

Southern Star is not Morgan Stanley's only natural gas investment, nor is MSIP the only Morgan Stanley merchant banking entity that has invested in natural gas. A second is Morgan Stanley Global Private Equity, a business unit which, like Morgan Stanley Infrastructure, is located within Morgan Stanley's Merchant Banking & Real Estate Investing group.[1650] As its name suggests, Morgan Stanley Global Private Equity is the financial holding company's leading private equity investment arm. Currently, Morgan Stanley Global Private Equity has one active fund, Morgan Stanley Capital Partners V.[1651]

Like MSIP, the Morgan Stanley Capital Partners V investment fund was established by Morgan Stanley and is managed by Morgan Stanley employees operating out of Morgan Stanley offices. It has an ownership structure almost as complicated as that of MSIP.[1652] Morgan Stanley is its largest investor, having held an ownership interest of between 23% and 33% in the fund since 2008.[1653] Morgan Stanley told the Subcommittee that MSIP and Morgan Stanley Capital Partners V, which are both within the Merchant Banking and Real Estate Investment group, share senior leadership but not other employees.[1654] In 2013, Morgan Stanley Global Private Equity had about 50 employees, all of whom were employed by Morgan Stanley.[1655]

[1645] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 331, 344.
[1646] Id. at 352.
[1647] Id.
[1648] Id. at 346.
[1649] 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," prepared by Morgan Stanley, MS-PSI-00000001 - 037, at 009.
[1650] 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 459 [sealed exhibit].
[1651] Id. Four predecessor funds sponsored by Morgan Stanley Capital Partners "have either been fully realized or are in liquidation."
[1652] Id. at 459-460.
[1653] 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 003.
[1654] 10/24/2014 "Morgan Stanley Infrastructure Partners: Southern Star Follow Up Questions," prepared by Morgan Stanley, MS-PSI-00000455 - 475, at 466.
[1655] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 326. In a recent job listing seeking an investment professional for Morgan Stanley Capital Partners (MSCP), Morgan Stanley wrote: "MSCP employs a fully-integrated Operating Partner model and is unique among middle market private equity firms in its ability to leverage the global network and resources of Morgan Stanley to benefit the investment team and management teams with whom we partner to drive value creation." October 2014 posting for "Vice President, Morgan Stanley Capital Partners," LinkedIn,

Morgan Stanley Capital Partners V has raised about $1.5 billion.[1656] Its investment portfolio currently includes at least three natural gas-related investments: Triana Energy, Trinity, and Sterling Energy.[1657] Triana Energy Investments LLC owns 70% of a natural gas exploration and production company in West Virginia.[1658] Trinity Investment Holdings, LLC owns 70% of "one of the largest independent CO2 [carbon dioxide] pipeline systems in the US."[1659] Sterling Investment Holdings LLC owns 63% of a natural gas gathering and processing company, Sterling Energy Investments LLC, and is headquartered in Denver, Colorado.[1660]

Like Southern Star, these natural gas companies have Morgan Stanley employees on their boards of directors and meet on a regular basis with Morgan Stanley personnel. They have similar operational and environmental risks as Southern Star.

(3) Issues Raised by Morgan Stanley's Natural Gas Activities

Morgan Stanley's expanding physical natural gas activities raise multiple concerns, including its decision to build and operate a commercial natural gas business using shell companies, unfair competition concerns, insufficient capital and insurance to protect against catastrophic event risks, conflicts of interest arising from controlling natural gas supplies while trading natural gas financial instruments, and inadequate safeguards.

(a) Shell Companies

Although Morgan Stanley has long traded natural gas and, for the last decade, invested in merchant banking natural gas businesses, it appears to have never before produced CNG or built a commercial energy facility. Additionally, the most striking and unusual aspect of Morgan Stanley's physical natural gas activities is its recent decision to introduce the use of shell companies. Morgan Stanley's formation and use of shell companies, run by Morgan Stanley employees, to build and operate a CNG facility appears to be an unprecedented use of the Gramm-Leach-Bliley grandfather authority.

By using shell entities with no employees or physical presence of their own, and installing its own senior executives as the shells' directors and officers, Morgan Stanley essentially created a corporate alter ego to operate a new commercial business. Morgan Stanley, through its shell entities, became the designer, builder, and soon-to-be operator of a new CNG facility, as well as the marketer and exporter of its products. Morgan Stanley chose, not only for the first time to start a new physical commodities business, but also to use shell companies to initiate construction of a complex, untested natural gas facility with no operational track record

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https://www.linkedin.com/jobs2/view/24772940?trk=job_view_company_other_jobs&trk=job_view_company_other_jobs.

[1656] 9/11/2013 "Morgan Stanley Infrastructure Platform Review," prepared by Morgan Stanley for FRBNY, FRB-PSI-400321 - 382, at 326 (listing Merchant Banking and Real Estate Investing Funds, which includes MSCP V); 10/14/2014 email from Morgan Stanley legal counsel to Subcommittee, "MS Questions." PSI-MorganStanley-18-000001 [sealed exhibit].

[1657] See Morgan Stanley Global Private Equity Fund website, portfolio list, http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html. See also 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

[1658] 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

[1659] Id. See also http://www.morganstanley.com/institutional/invest_management/private_equity/portfolio.html.

[1660] 5/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-05-000001 - 006, at 004.

or established market. Its actions raise a number of potential legal, operational, and financial risks.

Equally troubling is that Morgan Stanley embarked on this course of action, despite its novel elements, with only an "initial oral notice" to its regulator. While Morgan Stanley supplied additional information later, it was not until media reports alerted the Federal Reserve to the CNG project a year after Morgan Stanley began work on it, that regulators focused on the details. Even then, regulators didn't understand that Morgan Stanley was using shell companies with no employees and no prior business activities, and able to operate on a day-to-day basis only by utilizing Morgan Stanley's own personnel.

The Federal Reserve told the Subcommittee that it is still considering whether the Wentworth companies represent an appropriate exercise of the Gramm-Leach-Bliley grandfather authority. Since the Wentworth companies represent Morgan Stanley's first foray into the physical CNG industry, it cannot contend that the grandfather clause is protecting against the forced disinvestment of an existing commodity activity. In fact, it is difficult to see how the word "grandfather" applies. If Morgan Stanley is permitted to proceed, it will represent a major expansion of the ability of financial holding companies with grandfather authority to enter into commercial businesses. They will no longer have to buy an existing enterprise; they can start the business themselves.[1661] Allowing financial holding companies to start commercial businesses using shell entities managed by their own personnel cannot be reconciled with the longstanding bar against mixing banking and commerce or the intended scope of the grandfather clause.

In late October 2014, a media report indicated that Morgan Stanley may be considering selling the Wentworth companies and the CNG project to a third party.[1662]

(b) Unfair Competition

A second concern raised by Morgan Stanley's CNG project is the issue of unfair competition. Morgan Stanley apparently told the Federal Reserve that it launched the CNG project because it saw a "market opportunity." It acted around the same time as another company, Emera CNG LLC, filed an application to export CNG. The Wentworth application sought a similar authorization, except that it requested permission to export 60 billion cubic feet of CNG per year instead of the 9 billion sought by Emera. The competing applications show that Morgan Stanley, through its Wentworth shell entities, is in direct competition in the natural gas distribution business with a commercial enterprise.

Morgan Stanley's ability to compete commercially in an industry in which it has no prior experience is due, in part, to the inherent advantages that financial holding companies have when competing against businesses that don't own banks. Morgan Stanley has immediate access to inexpensive, ready credit through its bank subsidiary, enabling its borrowing costs to nearly always undercut those of a nonbank competitor. Another advantage is Morgan Stanley's

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[1661] When Goldman decided to enter the physical uranium business, Goldman acquired an existing company, Nufcor, whose employees declined to stay on and were replaced with Goldman personnel. In so doing, Goldman essentially turned a substantive company into a shell. Goldman's employees then took over a longstanding, well established business operation and expanded it. Goldman did not start up the business. In its CNG project, Morgan Stanley has dispensed with taking over an existing business with a track record of success, in favor of initiating a completely new business enterprise.

[1662] See "Morgan Stanley looks at sale of gas export venture," Financial Times, Gregory Meyer, Tom Braithwaite and Gina Chon (10/21/2014), http://www.ft.com/cms/s/0/76c23932-58c7-11e4-a31b-00144feab7de.html#axzz3GuK83tj9.

relatively low capital requirements. In 2012, the FRBNY Commodities Team determined that corporations engaged in oil and gas businesses typically had a capital ratio of 42% to cover potential losses, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%, making it much easier for them to invest corporate funds in their business operations.[1663]

Less expensive financing and lower capital are two key factors underlying the traditional U.S. ban on mixing banking with commerce. Morgan Stanley's direct competition with an energy company to construct a CNG export facility is simply not the type of activity that, under U.S. banking principles, is appropriate for a bank holding company. If Morgan Stanley sees CNG exports as a good market opportunity, it should be financing or investing in one or more of the companies entering that business rather than competing to run the business itself.

(c) Catastrophic Event Risks

A third set of concerns involves the catastrophic event risks attached to Morgan Stanley's CNG project and investments in Southern Star and other natural gas portfolio companies.

The CNG project, which seeks to produce containerized natural gas on a large scale that Morgan Stanley describes as "unique,"[1664] and which does not exist in the United States today, carries numerous risks. Building the facility and arranging for electrical and pipeline connections raises a host of operational issues, as does moving the natural gas by truck and vessel. The flammability and explosive nature of natural gas intensify the catastrophic event risks. Hurricanes, tornados, and floods in Texas compound the problem. Additional financial risks arise from the absence of an existing market for large scale CNG exports, and the necessity for CNG exports to compete with LNG exports. Morgan Stanley's liability for any mishap affecting the CNG project is particularly acute, since it owns and is in the process of building and operating the facility through shell corporations run by Morgan Stanley employees.

Southern Star, as an established natural gas pipeline company, poses similar catastrophic event risks. While Morgan Stanley takes the position that it would have little or no liability for a catastrophic event at Southern Star, because it is a merchant banking investment in which Morgan Stanley has only an indirect 11% ownership interest, the level of Morgan Stanley's control over the investment fund that owns Southern Star makes the liability issue less clear cut.

Southern Star is 100% owned by Morgan Stanley Investment Partners (MSIP), which was formed by and is closely affiliated with Morgan Stanley, its largest investor. Morgan Stanley employees manage MSIP, help it find investors, and oversee its investments. Those Morgan Stanley employees sit in Morgan Stanley offices and control MSIP's investments. Morgan Stanley employees also control Southern Star's Board of Directors, and advise it on financial, insurance and tax issues. In addition, Morgan Stanley, through its Board Members, oversees Southern Star vendors and pipeline safety, integrity, and compliance efforts.

As explained earlier, if a catastrophic event were to occur either in the United States or, in connection with CNG exports to foreign countries, multiple legal theories could be used to try to assign a portion of the liability to Morgan Stanley. Arguments could be made that Morgan Stanley was the owner and operator of the CNG facility involved in the event, the owner of the

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[1663] 2012 Summary Report, at FRB-PSI-200477 – 510, at 499.

[1664] 9/19/2014 letter from Morgan Stanley to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 008.

natural gas, or knowingly entrusted the natural gas to an incompetent operator, including operators in foreign ports and facilities.[1665] Morgan Stanley might be required to defend against claims in a state court, U.S. federal court, or foreign court, under the different laws in each jurisdiction. A financial institution viewed as being potentially liable for damages could see customers or counterparties withdraw funds, refrain from doing business, or demand increased compensation to continue doing business with the institution in light of its increased credit risk.

Morgan Stanley does not appear to be prepared for those types of unanticipated financial consequences. In 2012, the FRBNY Commodities Team found that Morgan Stanley had insufficient capital and insurance to cover potential losses from a catastrophic event.[1666] The 2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies, including Morgan Stanley, against estimated costs associated with "extreme loss scenarios." It found that at each institution, including Morgan Stanley, "the potential loss exceed[ed] capital and insurance" by $1 to $15 billion.[1667] That shortfall leaves the Federal Reserve, and ultimately U.S. taxpayers, at risk of having to provide financial support to Morgan Stanley should a catastrophic event occur.

(d) Conflicts of Interest

Still another set of issues raised by Morgan Stanley's natural gas activities involves conflicts of interest. The conflicts arise from the fact that Morgan Stanley trades natural gas financial products at the same time it is intimately involved with an array of physical natural gas activities. Its conduct raises questions about two sets of conflict of interest concerns, one involving non-public information and the other involving natural gas supplies.

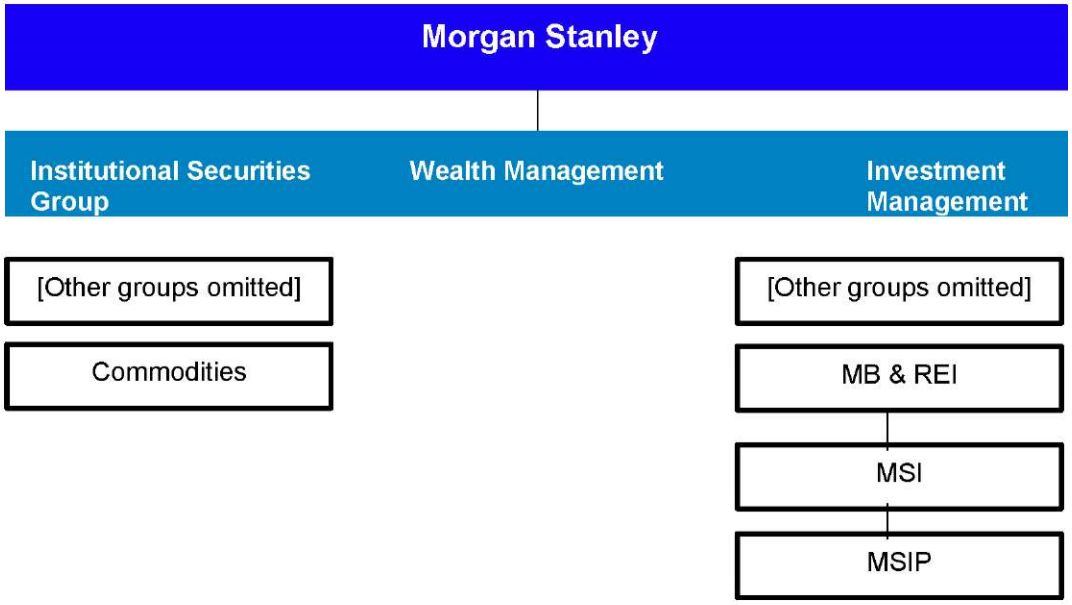
While commodities laws do not bar the use of non-public information by traders in the financial markets in the same way as securities laws, concerns about unfair trading advantages deepen when one commodities trader has access to significant non-public information. Morgan Stanley's merchant banking investments put Morgan Stanley employees on the boards of multiple companies involved with different aspects of the natural gas business, from natural production to pipelines to storage to LNG cargoes to CNG exports. Those board positions provide Morgan Stanley personnel with access to a massive amount of non-public information about the physical natural gas market.

When asked about this informational advantage, Morgan Stanley personnel explained that merchant banking was lodged in a different part of the bank than commodities, and merchant banking employees did not share non-public information about their portfolio companies with commodities personnel. The following graphic shows that the Commodities group falls under the Institutional Securities segment of the financial holding company, while the Merchant Banking and Real Estate Investments group falls under the Investment Management segment:

[1665] See discussion in the Goldman and uranium section above.

[1666] See 2012 Summary Report, at FRB-PSI-200477 – 510, at 498.

[1667] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499. The recent decision in the BP oil spill case suggests that the "extreme loss" scenarios may entail expenses beyond those contemplated as recently as 2012.



Source: 8/29/2014 "Morgan Stanley Infrastructure Partners, Overview of Southern Star," MS-PSI-00000001 - 037, at 007. "MB & REI" stands for Merchant Banking & Real Estate Investments.

While the two activities are lodged in separate parts of the financial holding company, and the Subcommittee saw no evidence of the misuse of confidential Southern Star information, Morgan Stanley commodity traders could gain non-public information from their colleagues about natural gas activities providing useful market intelligence for natural gas trades. In addition, the Wentworth shell companies are directly managed by employees in the Commodities group, meaning all non-public information related to the CNG project would be immediately and fully accessible to Morgan Stanley natural gas traders. The potential exists for Morgan Stanley commodity traders to use that non-public information to gain an unfair trading advantage over other market participants, including their customers and counterparties.

A second conflict of interest issue is whether Morgan Stanley would gain an unfair degree of control over CNG supplies if it actually completed construction of the planned CNG facility. The facility is apparently being designed to export 60 billion cubic feet of CNG per year. Given the infancy of the CNG export market, Morgan Stanley's plans suggest a significant market presence. Morgan Stanley's control over the timing and amount of the CNG it hopes to export raises questions about whether it could use its exports to benefit its natural gas trading activities. Those market manipulation concerns, and their accompanying legal, financial, and reputational risks, would not exist if Morgan Stanley remained a financial intermediary and trader in the natural gas financial market rather than increasing its involvement in physical natural gas activities.

(e) Inadequate Safeguards

A final set of issues involves the lack of regulatory safeguards related to financial holding company involvement with high risk physical natural gas activities. Natural gas is flammable and explosive. Natural gas prices are unpredictable and volatile. Large scale CNG exports have no established markets.

Because Morgan Stanley has relied on the grandfather clause to build and operate the CNG facility and on the merchant banking authority to invest in Southern Star and other natural gas companies, it has not notified or obtained prior permission from the Federal Reserve to engage those activities. For its part, the Federal Reserve has failed to issue guidance on the proper scope of the grandfather clause, including whether it may be used to authorize physical commodity activities that a holding company has never before conducted. The Federal Reserve has also failed to require annual disclosure of a comprehensive list of commodity-related activities undertaken under the grandfather and merchant banking authorities, so that it can learn of, track, and analyze those activities.

Because Morgan Stanley has relied on the grandfather clause for its CNG project, Morgan Stanley has not been required by the Federal Reserve to include the market value of that project when calculating compliance with the complementary physical commodities limit prohibiting those activities from exceeding 5% of the financial holding company's Tier 1 capital. The only cap on the size of Morgan Stanley's CNG activities is the statutory prohibition that its grandfathering activities not exceed 5% of Morgan Stanley's consolidated assets, a limit set so high as to be no restriction at all. In addition, its commodity-related merchant banking activities have been allowed to accumulate with no volume limit at all.

Morgan Stanley's physical natural gas activities disclose that, due to inadequate reporting requirements, the Federal Reserve is at times left in the dark about important physical commodity activities being conducted under the grandfather and merchant banking authorities. They also disclose that the Federal Reserve has failed to put key safeguards in place to limit the size and risks associated with those activities and to ensure the safe and sound operation of the financial holding company.

(4) Analysis

Despite the sale of portions of its oil merchanting business, Morgan Stanley remains heavily involved in physical commodities, as evidenced by its initiation of the CNG project and ongoing investments in natural gas businesses like Southern Star. Morgan Stanley's utilization of the Wentworth shell companies to build and operate a CNG export facility is an unprecedented and inappropriate use of the Gramm-Leach-Bliley grandfather authority. Its extensive natural gas merchant banking activities demonstrate the need for a size limit on those investments. The catastrophic risks presented by its natural gas activities indicate Morgan Stanley needs to increase its capital and insurance to protect U.S. taxpayers against being called on to shore up the firm. Potential market manipulation opportunities also call out for stronger oversight and preventative safeguards.

All of the financial holding companies examined by the Subcommittee have been involved with financial and physical natural gas activities. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

C. Morgan Stanley Involvement with Crude Oil

For more than 25 years, Morgan Stanley has engaged in extensive physical oil activities. Prior to its 2008 conversion to a bank holding company, Morgan Stanley built a wide-ranging physical oil business, including activities associated with producing, storing, supplying, and transporting oil. As part of that effort, Morgan Stanley purchased companies involved in various stages of the energy supply chain, such as TransMontaigne, which managed nearly 50 oil storage sites within the United States and Canada; Heidmar, which managed a fleet of 100 vessels delivering oil internationally; and Olco Petroleum, which blended oils, sponsored storage facilities, and ran about 200 retail gasoline stations in Canada. As part of its activities, Morgan Stanley supplied crude oil to a large European refinery, home heating oil to Northeastern utilities, and jet fuel to airlines. Over the last few years, Morgan Stanley began to reduce the extent of its physical oil activities. In 2013, it decided to sell many of its physical oil assets. In 2014, it sold TransMontaigne and some of its oil storage and transport facilities to an unrelated party. It arranged to sell additional physical oil assets to Rosneft, a Russian state owned company, only to see that transaction suspended when the United States imposed sanctions on Rosneft in connection with Russian incursions into Ukraine. In September 2014, Morgan Stanley told the Subcommittee that it intended to complete its exit from most of its physical oil business, although it would take longer than planned.

Morgan Stanley's physical oil activities present a classic case study of banking mixed with commerce, raising concerns about financial and catastrophic event risks as well as conflicts of interest from simultaneously trading both financial and physical oil products.

(1) Background on Oil

Crude oil, also known as petroleum, is a naturally occurring liquid formed through the heating and compression of organic materials beneath the earth's crust over an extended period of time.[1668] Crude oil and the products derived from it – including gasoline, diesel fuel, jet fuel, propane, and heating oil – are some of the most commonly used sources of energy in the world.[1669]

The most common method of extracting crude oil from the earth is drilling.[1670] In the method most commonly used in the oil industry, an extractor drills to the depth at which geologists believe oil is located. The driller then inserts a tube into the newly drilled hole so that the oil can flow through to the surface. Oil drilling can take place on land or offshore on a seabed using a drilling platform. Oil can also be extracted from "oil sands," typically beds of sand or clay mixed with water and a form of crude oil.[1671] A third method of extraction involves

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[1668] See 7/29/2009 "What is Crude Oil? A Detailed Explanation on this Essential Fossil Fuel," prepared by the Editorial Department, Oilprice.com website, http://oilprice.com/Energy/Crude-Oil/What-Is-Crude-Oil-A-Detailed-Explanation-On-This-Essential-Fossil-Fuel.html.

[1669] See 6/19/2014 "Oil Crude and Petroleum Products Explained," U.S. Energy Information Administration website, http://www.eia.gov/energyexplained/index.cfm?page=oil_home.

[1670] 7/29/2009 "What is Crude Oil? A Detailed Explanation on this Essential Fossil Fuel," prepared by the Editorial Department, Oilprice.com, website, http://oilprice.com/Energy/Crude-Oil/What-Is-Crude-Oil-A-Detailed-Explanation-On-This-Essential-Fossil-Fuel.html.

[1671] Id.

"hydraulic fracturing," which typically involves injecting water, sand, and chemicals under high pressure into petroleum-bearing rock formations such as shale to create new fractures in the rock and increase oil or natural gas flow to a well.[1672]

The bulk of oil production worldwide comes from state-owned oil companies.[1673] Large privately owned oil companies and smaller independent oil companies also play a key role in oil production. The five countries with the greatest crude oil production are Saudi Arabia, the United States, Russia, China, and Canada.[1674] In 2013, about 12.4 million barrels per day were produced in the United States, comprising roughly 14% of the crude oil produced worldwide.[1675] The United States was also the world's leading crude oil user during that time, consuming about 18.8 million barrels per day in 2013.[1676] Other prominent oil-consuming nations include China, Japan, and India.[1677]

Crude Oil Infrastructure. Crude oil requires a complicated infrastructure to make the oil usable for U.S. industry. First, the crude oil must be located and produced, using drilling rigs, oil sand processing, or hydraulic fracturing techniques. Next, it must be transported, typically by oil tanker, pipeline, or railway.[1678] Commonly, oil is taken by pipeline to a port, where it is loaded onto an ocean-going tanker and transported to its ultimate destination.[1679] Within the United States, oil is typically transported via pipeline, but due to a recent spike in oil production, despite more than 190,000 miles of pipeline,[1680] the existing U.S. pipeline network cannot reach or accommodate all of the oil requiring transport within U.S. borders.[1681] Oil companies have

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[1672] See undated "Hydraulic Fracturing," prepared by U.S. Geological Society, U.S. Geological Society website, http://energy.usgs.gov/OilGas/UnconventionalOilGas/HydraulicFracturing.aspx.

[1673] 9/30/2014 "Energy in Brief: Who are the major players supplying the world oil market?" U.S. Energy Information Administration website, http://www.eia.gov/energy_in_brief/article/world_oil_market.cfm. As it is used here, the term "production" refers to the process by which crude oil is extracted from oil reserves in a particular place.

[1674] See undated "International Energy Statistics: 2013 Petroleum Production." U.S. Energy Information Administration website.
http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=53&aid=1&cid=regions,&syid=2013&eyid=2013&unit=TBPD.

[1675] See undated "International Energy Statistics: 2013 Petroleum Production." U.S. Energy Information Administration website, http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=53&aid=1. One barrel is equivalent to 42 U.S. gallons. 5/22/2014 "Frequently Asked Questions," U.S. Energy Information Administration website, http://www.eia.gov/tools/faqs/faq.cfm?id=24&t=10.

[1676] See undated "International Energy Statistics: 2013 Petroleum Consumption," U.S. Energy Information Administration website.
http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=regions&syid=2013&eyid=2013&unit=TBPD.

[1677] Id.

[1678] 9/29/2014 "Transporting Oil and Natural Gas," American Petroleum Institute website, http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas.

[1679] Id.

[1680] See undated "Oil and Natural Gas Overview," American Petroleum Institute website, http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas/pipeline/where-are-the-oil-pipelines. See also 2013 "U.S. Refineries, Crude Oil, and Refined Products Pipelines" prepared by American Energy Mapping, American Petroleum Institute website, http://www.api.org/oil-and-natural-gas-overview/transporting-oil-and-natural-gas/pipeline/~/media/Files/Oil-and-Natural-Gas/pipeline/US-Pipeline-Map-API-Website3.pdf.

[1681] See "Oil boom downside: Exploding trains," Politico, Kathryn A. Wolfe and Bob King (6/8/2014), http://www.politico.com/story/2014/06/exploding-oil-trains-energy-environment-107966.html.

increasingly turned to the railway system to transport the excess.[1682] On occasion, they also use tanker trucks.[1683] The crude oil is typically transported to a refinery to process it into refined oil products. The United States currently has about 142 oil refineries.[1684] The refined oil products are typically stored at the refinery until they are transported to a broker or end user, such as a utility, airline, gasoline station, or industrial plant.

Crude Oil Markets and Prices. Crude oil is the largest and most actively traded commodity market in the world, with numerous physical and financial trading venues and market participants.[1685] There are currently hundreds of crude oil and refined oil products available for trade.[1686] Because of the size of the market and the many participants, crude oil prices are set globally, typically using U.S. dollars.[1687] Over the last ten years, crude oil prices have been volatile, with the most notorious price swings in 2008, when oil spiked at $147 per barrel and then fell to about $32 per barrel, a difference of $115 in less than six months.[1688] This year, from August to October 2014, crude oil prices fell from about $100 to about $80 per barrel, a 20% drop in two months.[1689]

[1682] Id. See also undated "Rail Accidents Involving Crude Oil and Ethanol Releases." NTSB report by Paul L. Stancil, NTSB website. at slide 2, https://www.ntsb.gov/news/events/2014/railsafetyforum/presentations/Opening%20Presentation%20Rail%20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf.

[1683] See 10/31/2013 "EIA's new map layers provide more detailed information on petroleum infrastructure," U.S. Energy Information Administration website. http://www.eia.gov/todayinenergy/detail.cfm?id=13611.

[1684] See 6/25/2014 "Petroleum & Other Liquids," U.S. Energy Information Administration website, http://www.eia.gov/dnav/pet/pet_pnp_cap1_dcu_nus_a.htm.

[1685] See undated "Crude Oil Futures Quotes," CME Group website, http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude.html.

[1686] See, e.g., undated "ICE Crude & Refined Oil Products," prepared by ICE Futures Europe, ICE Futures Europe website, at 6. https://www.theice.com/publicdocs/ICE_Crude_Refined_Oil_Products.pdf.

[1687] See 7/2014 "Crude Oil Methodology and Specifications Guide," prepared by Platts, Platts' website, at 3, 8, http://www.platts.com/IM.Platts.Content/MethodologyReferences/MethodologySpecs/Crude-oil-methodology.pdf. See also "Why Do Oil Prices Swing So Wildly?" CBS Money Watch, Cait Murphy (9/1/2009), http://www.cbsnews.com/news/why-do-oil-prices-swing-so-wildly/.

[1688] See, e.g., undated "Spot Price Series History," U.S. Energy Information Administration website, "Cushing, OK WTI Spot Price FOB," http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D.

[1689] Id.



Source: 10/8/2014 "Historical Crude Oil Prices and Price Chart," InfoMine website, http://www.infomine.com/investment/metal-prices/crude-oil/all/.

In the financial markets, crude oil and refined oil products can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. The most actively traded crude oil future in the United States is a standardized contract for 1,000 barrels of West Texas Intermediate (WTI) crude oil, which is listed by CME Group Inc.[1690] The WTI contract is traded on the CME Globex and CME Clearport trading platforms, and by open outcry on the NYMEX floor.[1691] The contract can be settled financially or through the physical delivery of WTI, although physical settlement is atypical. Another leading crude oil future is a standardized contract for 1,000 barrels of Brent crude oil, which is traded on ICE Futures Europe and cash settled.[1692] It is the most actively traded crude oil future in the world.[1693] Crude oil and refined oil products can also be traded through a variety of financially-settled, over-the-counter swaps and options on the Intercontinental Exchange.[1694]

[1690] See "Crude Oil Futures Contract Specs," CME Group website, http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude_contract_specifications.html. The contract price is based upon delivery of WTI crude oil, a light, sweet crude oil produced in Texas, at Cushing, Oklahoma, where a number of oil pipelines converge.

[1691] Id.

[1692] See "Brent Crude Futures," ICE Futures Europe website, https://www.theice.com/products/219/Brent-Crude-Futures.

[1693] See "The Growth of Brent Crude Oil," Intercontinental Exchange (ICE) website, https://www.theice.com/publicdocs/ICE_Brent_Infographic.pdf. The contract price is based upon delivery of Brent crude oil, a light, sweet crude oil produced in the North Sea.

[1694] See oil products listed on the ICE website, https://www.theice.com/products.

In the physical market, crude oil and refined oil products are bought and sold in thousands of trading venues around the world, typically using bilateral contracts. The contracts are settled using electronic, voice, or in-person transactions involving a variety of producers, brokers, intermediaries, and end users. Often, Brent and WTI futures prices are used as benchmark prices in the contracts used to buy and sell physical oil.

Crude Oil Incidents. Extracting, storing, refining, and transporting crude oil, which is highly flammable, carry ever-present risks of fire and explosion.[1695] They also present a variety of environmental risks, including oil spills. Past catastrophic events include the 2011 BP Deepwater Horizon incident involving an oil spill from a deep-sea drilling platform,[1696] the 2010 Kalamazoo River incident involving a ruptured oil pipeline,[1697] and the 1989 Exxon-Valdez incident involving an oil spill from a shipwrecked oil tanker.[1698] Additionally, crude oil is extremely toxic and can cause health issues in the event of physical contact, inhalation, ingestion, or chronic exposure.[1699]

Recently, railway transport of oil has also emerged as an environmental and safety issue. New oilfields using hydraulic fracturing techniques, particularly in the North Dakota Bakken shale formation, often have no pipeline access, and railroads have increasingly been used to carry unprecedented volumes of crude oil across the country. According to the National Transportation Safety Board (NTSB), the amount of crude oil transported by rail has increased from about 10,000 carloads in 2005, to 400,000 carloads in 2013.[1700] At a recent forum, the NTSB described nine "significant" crude oil railway accidents since 2006, involving 2.8 million gallons of oil.[1701] One of the deadliest oil train crashes occurred in Lac-Mégantic, Quebec, on July 6, 2013, when 63 railcars jumped the rails, setting off a chain of explosions and sending burning oil rolling through the small town, resulting in 47 deaths.[1702] The majority of the crude

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[1695] See 2/1/2013 "Safety Data Sheet: Crude Oil, Sweet or Sour," prepared by JPMorgan Ventures Energy Corp., JP Morgan website, https://www.jpmorgan.com/cm/BlobServer/commodities_crudeoil.pdf?blobkey=id&blobwhere=1320592138413&blobheader=application/pdf&blobheadername1=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

[1696] See 1/2011 "Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling," Report to the President, prepared by the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, http://www.gpo.gov/fdsys/pkg/GPO-OILCOMMISSION/pdf/GPO-OILCOMMISSION.pdf.

[1697] See 9/15/2010 prepared testimony of EPA Administrator Lisa P. Jackson, "Enbridge Pipeline Oil Spill near Marshall, Michigan," hearing before the House Committee on Transportation and Infrastructure, http://www.epa.gov/enbridgespill/pdfs/enbridge_lpj_testimony_20100915.pdf.

[1698] See 5/1989 "The Exxon Valdez Oil Spill: Report to the President," prepared by the National Response Team, http://www.akrrt.org/archives/response_reports/exxonvaldez_nrt_1989.pdf.

[1699] See 2/1/2013 "Safety Data Sheet: Crude Oil, Sweet or Sour," prepared by JPMorgan Ventures Energy Corp., JP Morgan website, at 3, https://www.jpmorgan.com/cm/BlobServer/commodities_crudeoil.pdf?blobkey=id&blobwhere=1320592138413&blobheader=application/pdf&blobheadername1=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

[1700] See undated "Rail Accidents Involving Crude Oil and Ethanol Releases," NTSB report, NTSB website, at slide 2, https://www.ntsb.gov/news/events/2014/railsafetyforum/presentations/Opening%20Presentation%20Rail%20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf.

[1701] Id. at slide 5. The NTSB reported 16 crude oil and ethanol accidents since 2006. The combined accidents resulted in "48 fatalities, 281 [derailed tank cars], 2.8 million gallons of crude oil released, 2.0 million gallons of ethanol released, [and] fires and environmental damage." Id.

[1702] See 1/21/2014 National Transportation Safety Board Safety Recommendations, at 2, 6-7.

oil accidents identified by the NTSB occurred in the last eighteen months, five of them since the July 2013 accident: Aliceville, Alabama (November 2103); Casselton, North Dakota (December 2013); New Augusta, Mississippi (January 2014); Plaster Rock, New Brunswick (January 2014); and Vandergrift, Pennsylvania (February 2014).[1703] Explosions, fires, and oil spills caused extensive property and environmental damage. While some railroads have voluntarily strengthened their safety procedures and retrofitted their tank cars and equipment, others have not.[1704]

(2) Morgan Stanley Involvement with Oil

For more than 25 years, Morgan Stanley has been an active participant in physical and financial oil markets. Acting as an investment bank, the firm began buying and selling both oil futures and physical barrels of oil in the mid-1980s. Over the next 10 years, Morgan Stanley gradually increased its involvement in the physical side of the oil industry, purchasing or leasing oil storage facilities and pipelines; expanding into refined oil products such as heating oil, diesel, gasoline, and jet fuel; and chartering oil transport ships. From 2006 to 2008, it purchased companies involved with oil exploration, storage, distribution, pipelines, blending, and even gasoline service stations. When the financial crisis began roiling markets worldwide, Morgan Stanley converted to a bank holding company on an emergency basis in September 2008. Despite its new status as a holding company restricted to the business of banking, with implied taxpayer backing, Morgan Stanley continued its physical oil activities. In a 2011 internal analysis, the Federal Reserve wrote that Morgan Stanley "controls a 'vertically-integrated model' spanning crude oil production, distillation, storage, land and water transport, and both wholesale and retail distribution."[1705]

That same year, Morgan Stanley began to reduce its physical oil activities. By 2012, its revenues were less than half of what they were in 2008.[1706] In 2013, Morgan Stanley began exiting some of its physical oil activities, and in 2014, took steps to sell major assets.[1707] It has not yet, however, completely exited the physical oil business, due in part to international conflicts, and may require another year to do so.

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http://www.ntsb.gov/doclib/recletters/2014/R-14-004-006.pdf (discussing Lac-Mégantic railway derailment). See also "Who's liable for the Lac-Mégantic disaster," Montreal Gazette, Adam Kovac and Riley Sparks (8/10/2013). http://www.montrealgazette.com/news/liable+Mégantic+disaster/8775349/story.html; "The Dark Side of the Oil Boom," Politico, Kathryn A. Wolfe and Bob King, (6/8/2014). http://www.politico.com/story/2014/06/exploding-oil-trains-energy-environment-107966.html.

[1703] See undated "Rail Accidents Involving Crude Oil and Ethanol Releases," NTSB report, NTSB website, at slide 4, https://www.ntsb.gov/news/events/2014/railsafetyforum/presentations/Opening% 20Presentation%20Rail %20Accidents%20Involving%20Crude%20Oil%20and%20Ethanol%20Releases.pdf. See also "The Dark Side of the Oil Boom," Politico. Kathryn A. Wolfe and Bob King. (6/8/2014) (analyzing 40 years of federal data showing a dramatic increase in oil train incidents over the past five years).

[1704] See, e.g., 9/2014 "Moving Crude Oil by Rail," prepared by Association of American Railroads, Association of American Railroads website, https://www.aar.org/keyissues/Documents/Background-Papers/Crude%20oil%20by%20rail.pdf.

[1705] 6/21/2011 "Section 4(o) of the Bank Holding Company Act – Commodity-related Activities of Morgan Stanley and Goldman Sachs," prepared by the Federal Reserve, FRB-PSI-200936 - 941, at 937.

[1706] See 2/11/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-02-000001 - 004, at 002.

[1707] See discussion in the overview of Morgan Stanley, above.

(a) Building a Physical Oil Business

Morgan Stanley first registered with the CFTC as a commodities trader in 1982, initiating its career as an oil trader in the financial commodity markets.[1708] In a 2010 letter to the Federal Reserve, Morgan Stanley wrote:

> "Morgan Stanley has been trading as principal in crude oil since 1984 and in refined products since 1985. Over the past 25 years, Morgan Stanley has grown into one of the preeminent energy trading firms, serving an expansive cross-section of US and foreign corporations, municipalities and others seeking to access these markets and, as such, Morgan Stanley provides significant liquidity to these markets."[1709]

Morgan Stanley became active in the physical oil markets around the same time. According to one oil historian, it began trading crude oil under Louis Bernard, a senior partner at the firm, and Neal Shear, a commodities trader recruited from J. Aron & Co.[1710] As part of that effort, the firm also hired two oil traders from oil companies, John Shapiro from Conoco, and Nancy Kropp from Sun Oil.[1711] The oil historian wrote that, at the same time Morgan Stanley launched its oil futures trading operation, "[t]o ensure a constant stream of information about the market's movements ahead of its rivals," it leased "a few oil storage containers" in Cushing, Oklahoma.[1712] As a result, "[h]our by hour, the traders in New York would be aware of whether there was a surplus or a shortage" of the West Texas Intermediate crude oil that provided the benchmark price for crude oil futures traded on the NYMEX.[1713]

Trading primarily in crude oil, Morgan Stanley gradually increased the size of its oil desk until, by 1990, it reportedly included 40 people.[1714] In March 1990, Morgan Stanley hired Olav Refvik, an oil trader from Statoil who, together with John Shapiro, provided the leadership for its oil commodity activities over the next decade.[1715] By 1993, Morgan Stanley expanded its oil trading efforts into Canada, Europe and Asia, opening trading desks in Calgary, London, Singapore, and Tokyo.[1716]

[1708] See undated "Morgan Stanley & Co. LLC," National Futures Association BASIC website. http://www.nfa.futures.org/basicnet/Details.aspx?entityid=UpygXzt3Ct4%3d&rn=N. See also 10/10/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-17-000001 - 003, at 001.

[1709] 7/8/2010 letter from Morgan Stanley to the Federal Reserve. FRB-PSI-200173 - 182, at 174. See also 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by the Federal Reserve Board of New York. FRB-PSI-304627 - 645, 631 [sealed exhibit] (stating that "Morgan Stanley is one of the largest players in the physical and financial commodities trading space," trades "Oil Liquids," and has been "an active player in the commodities markets for over 25 years").

[1710] Oil: Money, Politics and Power in the 21st Century, Tom Bower (Grand Central Publishing 2010), at 48 and 49.

[1711] Id. at 49.

[1712] Id.

[1713] Id. See also "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/news/articles/SB110971828745967570 (indicating that, in 1986, Mr. Shapiro convinced Morgan Stanley to lease oil storage tanks in Cushing, store low-priced crude oil, and wait for increased prices).

[1714] Bower, at 136.

[1715] Id.

[1716] Id. at 146.

Becoming "King of New York Harbor." At the suggestion of Mr. Refvik, Morgan Stanley began to lease substantial oil storage facilities, not only in Cushing, Oklahoma, but also in New York, New Jersey, and Connecticut.[1717] Those facilities were used to store oil transported to the United States by ship until needed at nearby refineries or shipment to clients via pipelines that supplied the East Coast. They also enabled Morgan Stanley to store oil while waiting for better prices. Morgan Stanley told the Subcommittee that it entered into its first oil storage agreement in the New York-New Jersey-Connecticut area with Wyatt Inc. in the late 1980s or early 1990s.[1718] By 1994, it also had oil storage agreements with IMTT-Bayonne in New Jersey and GATX Terminal Corp. in Staten Island, New York.[1719] Mr. Refvik was eventually dubbed "King of New York Harbor,"[1720] and reportedly helped integrate Morgan Stanley's physical and financial oil trading efforts.[1721]

Morgan Stanley records show that, in the month of September 1997, among other activities, it bought and sold about 7 million of barrels of heating oil, gasoline, and diesel with over two dozen counterparties in the Northeast.[1722] That same month, it bought and sold about 5.7 million barrels of gasoline with over 40 counterparties in Texas.[1723] It also leased storage facilities for heating oil, diesel, and kerosene, and at the end of the month, paid taxes on an inventory of nearly 2 million barrels of heating oil and 951,000 barrels of diesel.[1724] In 1997, Morgan Stanley also entered into contracts to "process, refine, blend or otherwise alter crude oil into refined products," and to transport oil via pipelines and chartered vessels.[1725]

(b) Conducting Physical Oil Activities

Morgan Stanley's physical oil activities continued to expand over the years and continued to include storing, supplying, transporting, and processing oil. It conducted those activities through both its Liquids Oil Desk in the Commodities group and through business subsidiaries owned by Morgan Stanley Capital Group, its primary commodities trading arm.

Storing Oil. One of Morgan Stanley's primary physical oil activities was to store vast quantities of oil in facilities located within the United States and abroad. According to Morgan Stanley, in the New York-New Jersey-Connecticut area alone, by 2011, it had leases on oil storage facilities with a total capacity of 8.2 million barrels, increasing to 9.1 million barrels in 2012, and then decreasing to 7.7 million barrels in 2013.[1726] Morgan Stanley also had storage

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[1717] Id.; 10/10/14 letter from Morgan Stanley's legal counsel to the Subcommittee. PSI-MorganStanley-17-000001 - 003, at 001.
[1718] Id.
[1719] Id.
[1720] See "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/news/articles/SB110971828745967570; "The Merchants of Wall Street: Banking, Commerce, and Commodities," Saule T. Omarova, 98 MINN. L. REV. 265, 314 (2013).
[1721] "Noble Oil Desk Says Goodbye to Refvik, the 'King of NY Harbor,'" Reuters, David Sheppard (10/23/2012), http://www.reuters.com/article/2012/10/23/noble-refvik-idAFL1E8LNH2M20121023.
[1722] 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174.
[1723] Id. at 175.
[1724] Id.
[1725] Id. at 176.
[1726] 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-19-000001 - 005, at 001-002.

facilities in Europe and Asia.[1727] According to the Federal Reserve, by 2012, Morgan Stanley held "operating leases on over 100 oil storage tank fields with 58 million barrels of storage capacity globally."[1728]

Morgan Stanley leased its storage facilities from its wholly-owned subsidiary, TransMontaigne which specialized in oil storage and transport services, and from unrelated third parties. Morgan Stanley told the Subcommittee that, of the 40 to 50 million barrels of storage capacity it leased in 2013, it estimated that about 15 million barrels were leased from TransMontaigne and about 35 million barrels were leased from unrelated third parties.[1729]

Morgan Stanley used its storage facilities to build inventories with millions of barrels of different types of oil. The following chart provides the total Morgan Stanley inventories for five types of oil products from 2008 to 2012:

Morgan Stanley Physical Oil Inventories
2008-2012

	2008	2009	2010	2011	2012
Crude Oil	1.1 million	633,000	12.3 million	1.0 million	1.7 million
Heating Oil	7.3 million	15.2 million	11.4 million	9.0 million	5.8 million
Jet/Kerosene	4.6 million	10.6 million	6.6 million	5.8 million	4.0 million
Gasoline	4.5 million	7.6 million	5.3 million	7.5 million	6.2 million
Fuel Oil	974,000	1.8 million	1.9 million	1.4 million	1.7 million

In Barrels
Source: 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-03-000002, 007.

Supplying Oil. In addition to storing oil, over the years, Morgan Stanley became an oil supplier for a variety of end users. From 2008 to 2013, for example, it supplied crude oil to several refineries. One contract was with a major European oil and chemical company, Ineos Group Ltd., which had oil refineries in France and Scotland.[1730] Under their agreement, from 2008 to 2012, Morgan Stanley provided the Ineos refineries with a total of about 500 million barrels of crude oil.[1731] Morgan Stanley also entered into crude oil supply agreements with the

[1727] See, e.g., 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 634 [sealed exhibit].
[1728] 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by the Federal Reserve Bank of New York Commodities Team, (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510, at 485 [sealed exhibit]. See also 2/11/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 008 (indicating that, in 2013, Morgan Stanley had "~50 million bbl [barrels] of leased oil liquids storage capacity").
[1729] Subcommittee briefing by Morgan Stanley (2/11/2013).
[1730] See, e.g., undated "Company: Ineos at a glance," Ineos website, http://www.ineos.com/company/; 7/23/2007 Ineos press release, "Ineos and Morgan Stanley announce oil refining agreement," http://www.ineos.com/news/ineos-group/ineos-and-morgan-stanley-announce-oil-refining-agreement/?business=INEOS+Group; "Morgan Stanley to Supply Crude Oil to Ineos," Reuters, (7/23/2007), http://www.reuters.com/article/2007/07/23/morgan-stanley-ineos-idUSL2388575320070723.
[1731] See 2009 "Morgan Stanley Global Commodities Overview," FRB-PSI-618889 – 908. See also 10/24/2014 email from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-22-000001 - 003, at 002. See also,

Toledo Refining Company LLC in March 2011, and with Delaware City Refining Company LLC in April 2011, both of which were later assigned to PBF Holding Company LLC.[1732] Both agreements have since concluded. In addition, in August 2012, Morgan Stanley entered into an agreement with Paulsboro Refining Company LLC to purchase its refined oil products; that contract was also later assigned to PBF Holding Company LLC and has since ended.[1733] Currently, according to Morgan Stanley, it has no oil supply contracts with any refineries.

Morgan Stanley also has a long history of supplying home heating oil and diesel to utilities and other customers in the Northeast. According to one oil historian, Mr. Refvik was responsible for increasing Morgan Stanley's involvement with refined oil products like heating oil, diesel, and jet fuel.[1734] Refined oil products represent a complex market with a variety of logistical, operational, and financial risks, since over 100 types of crude oil are produced worldwide, require differing refining procedures in summer and winter, and must be delivered to an appropriate refinery able to serve specific markets.[1735]

In 1991, Mr. Refvik reportedly led Morgan Stanley to purchase an insolvent oil refinery in Connecticut, and use it to supply heating oil and diesel on a daily basis to customers in the Northeast.[1736] Over the next few years, Morgan Stanley leased additional oil storage facilities in New Jersey and Connecticut.[1737] In 2001, during an unexpected cold snap, Morgan Stanley became a leading supplier of home heating oil in the region, reportedly able to sell oil when others ran out.[1738] Since 2008, Morgan Stanley has held an inventory of millions of barrels of home heating oil with a total dollar value of as much as $1.3 billion at a time.[1739] In 2011 alone, Morgan Stanley purchased 950,000 barrels of home heating oil from the U.S. Heating Reserve when the reserve switched to a different fuel.[1740]

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e.g., "ChinaOil Takes over Morgan Stanley's Ineos Marketing Deal," Reuters, Chen Aizhu (3/14/2012), http://www.reuters.com/article/2012/03/14/us-morgan-ineos-petrochina-idUSBRE82D06E20120314.

[1732] 10/24/2014 email from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-22-000001 - 003, at 001.

[1733] Id.

[1734] Bower, at 136; "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/news/articles/SB110971828745967570.

[1735] See, e.g., 12/2/2009 "A Detailed Guide on the Many Different Types of Crude Oil," Oilprice.com website, http://oilprice.com/Energy/Crude-Oil/A-Detailed-Guide-On-The-Many-Different-Types-Of-Crude-Oil.html.

[1736] Bower at 138-139.

[1737] See "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/news/articles/SB110971828745967570.

[1738] Id.

[1739] See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 003; 3/4/2013 letter from Morgan Stanley legal counsel to Subcommittee, at PSI-MorganStanley-03-000001 - 006, at 007.

[1740] See 2/3/2011 DOE press release, "DOE Accepts Bids for Northeast Home Heating Oil Stocks," http://energy.gov/fe/articles/doe-accepts-bids-northeast-home-heating-oil-stocks; 2/10/2011 DOE press release, "DOE Completes Sale of Northeast Home Heating Oil Stocks," http://energy.gov/fe/articles/doe-completes-sale-northeast-home-heating-oil-stocks. The U.S. Heating Reserve was established in 2000, to ensure available supplies at a reasonable cost in the event of an emergency. See undated "Heating Oil Reserve," U.S. Department of Energy Office of Fossil Energy website, http://energy.gov/fe/services/petroleum-reserves/heating-oil-reserve. In 2011, the U.S. Heating Reserve was reduced from 2 million to 1 million barrels, and replaced all of the heating oil with diesel,

From at least 2003 to the present, Morgan Stanley has also been a routine supplier of physical jet fuel to airlines operating in the United States, as described in more detail below. In addition, it became the major oil supplier to TransMontaigne, which keeps a variety of fuels at its storage sites across the country to service client needs.[1741] For example, under a "Terminal Servicing Agreement," Morgan Stanley Capital Group sold physical refined oil products on a "just-in-time" basis to TransMontaigne affiliates which then re-sold them to their customers.[1742]

Transporting Oil. In connection with its physical oil storage and supply activities, Morgan Stanley also became an active participant in the transportation of oil.[1743] It focused in particular on oil tankers, purchasing ownership interests in companies that handled the logistics for chartering vessels, including the Heidmar Group and Global Energy International, described below. According to Morgan Stanley, its shipping operation enabled it to transport physical oil products from less to more expensive markets and to meet its oil supply obligations.[1744] According to the Federal Reserve, in 2009, Morgan Stanley "was ranked 9th globally in shipping oil distillates," and by 2012, had "over 100 ships under time charters or voyages for movement of oil product."[1745]

In addition to oil transport ships, Morgan Stanley, through its wholly-owned subsidiary, TransMontaigne, moved oil via pipelines, trucks, and railroad cars.[1746] In each mode of transportation, Morgan Stanley focused on leasing, rather than owning, the vessels, vehicles, or railways used to move the oil.

Producing and Processing Oil. In addition to storing, supplying, and transporting oil, Morgan Stanley devoted a small portion of its physical oil business to oil exploration and production. Rather than purchase companies directly engaged in oil exploration or production, Morgan Stanley acquired a company that provided financing to those companies. In 2006, Morgan Stanley became the 99.5% owner of Wellbore Capital, LLC, a Dallas firm which "invest[s] in oil and natural gas exploration and development projects."[1747] According to its website, in 2010, Wellbore Capital's portfolio was valued at $100 million and included oil and gas working interest investments, including about 90 wells and 65,000 net acres in Texas,

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a cleaner burning fuel. See undated "Heating Oil Reserve," U.S. Department of Energy Office of Fossil Energy website, http://energy.gov/fe/services/petroleum-reserves/heating-oil-reserve.

[1741] See, e.g., 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 124.

[1742] Id.

[1743] See 6/21/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-06-000001 – 006, at 002.

[1744] Subcommittee briefing by Morgan Stanley (2/11/2013); 2/11/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 016; 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 634, 636 [sealed exhibit].

[1745] 2012 Summary Report, at 486 [sealed exhibit]. See also 2/11/2013 "Morgan Stanley Commodities Business Overview," prepared by Morgan Stanley for the Subcommittee, PSI-MorganStanley-01-000001 - 027, at 008 (indicating that, in 2013, Morgan Stanley had "~100 vessels on average under time and spot charter").

[1746] See, e.g., TransMontaigne website, http://www.transmontaignepartners.com/map/, and information below.

[1747] 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 008, 034.

Oklahoma, and Louisiana.[1748] In addition, in 2009, Morgan Stanley acquired a 43.75% ownership interest in a Wellbore subsidiary, Big C Gathering LLC, which ran a processing facility for raw crude oil and natural gas.[1749]

Acquiring Oil Related Businesses. To conduct its physical oil activities, Morgan Stanley purchased a number of companies involved in different sectors of the oil market. According to a 2009 Federal Reserve examination, Morgan Stanley's "Strategic Transactions Group," which designed principal investments for Morgan Stanley within the "Global Commodities Investments" group, purchased 15 companies from 2006 to 2009.[1750] Three key acquisitions were TransMontaigne, Olco Petroleum, and Heidmar.

TransMontaigne. On September 1, 2006, in a major expansion of its physical oil activities, Morgan Stanley purchased TransMontaigne Inc., a company based in Denver, Colorado and engaged in oil sales, storage, and transport.[1751] TransMontaigne became a wholly-owned subsidiary of Morgan Stanley Capital Group, the major commodities arm of the financial holding company, and Morgan Stanley employees took a majority of the seats on TransMontaigne's Board of Directors. TransMontaigne became a key contributor to Morgan Stanley's physical oil storage, supply, and transport activities.

Through various subsidiaries and affiliates, the TransMontaigne group of companies offered multiple oil-related supply, storage, and transport services. TransMontaigne Inc. described itself as "a leading wholesale fuel provider," offered a variety of unbranded fuels for sale, and also provided fuel transport services and commercial marine fuel supply.[1752] Its affiliate, TransMontaigne Partners, provided "integrated terminaling, storage, transportation and related services for customers engaged in the distribution and marketing of" a variety of oil and chemical products.[1753] Those products included "gasolines, diesel fuels, heating oil and jet fuels," as well as "residual fuel oils and asphalt."[1754] TransMontaigne's policy was not to purchase or market the products that it handled or transported.[1755]

According to its SEC filings, TransMontaigne maintained storage facilities throughout the United States, primarily in the Midwest, along the Mississippi and Ohio Rivers, in Texas, along the Gulf Coast, and in the Southeast.[1756] Its five key operations involved: (1) receiving refined oil products from pipeline, ship, barge, or railcar sources and transferring them to storage

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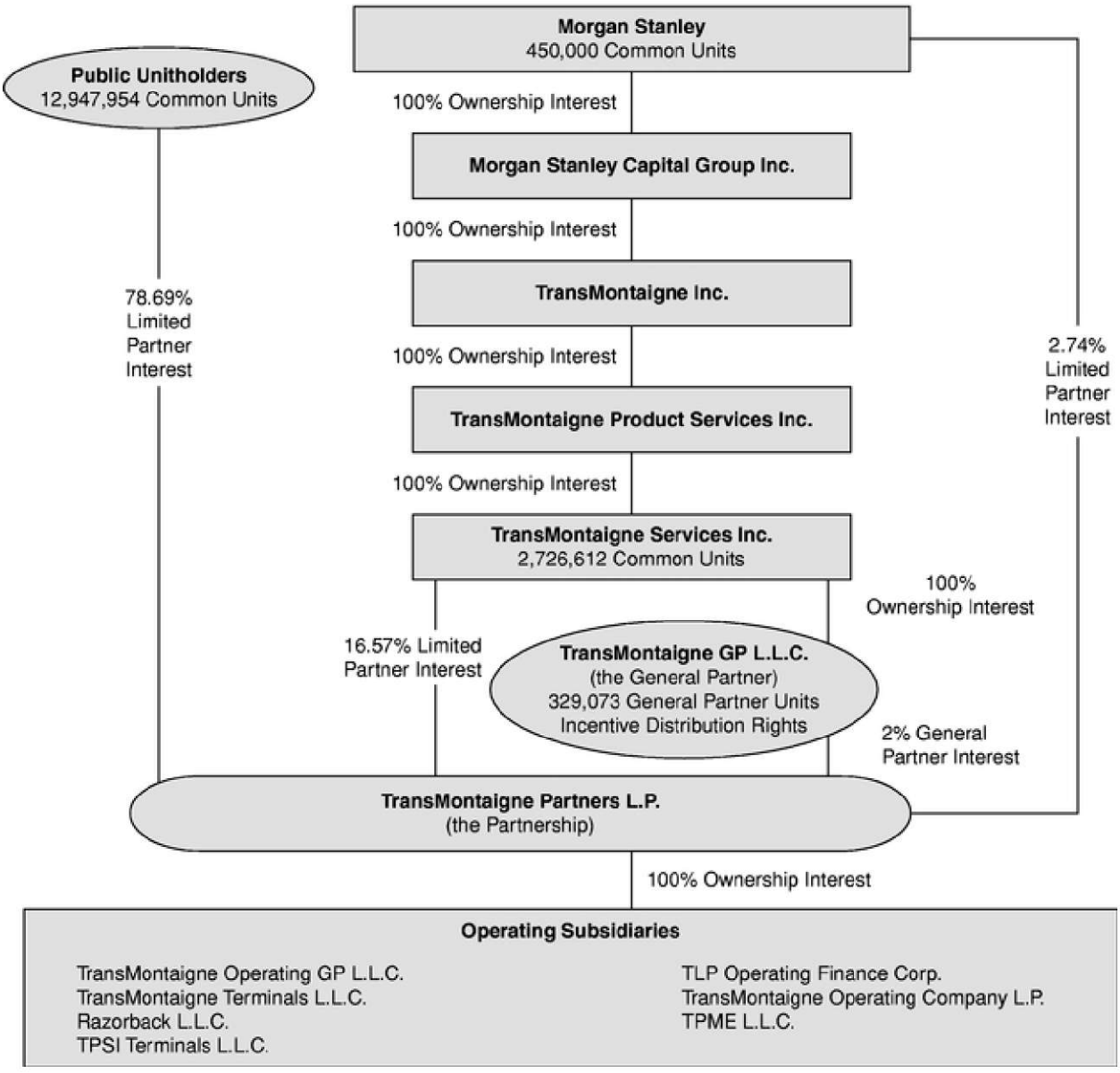
[1748] See undated "Investments," Wellbore Capital LLC website, http://www.wellborecapital.com/investments.html.
[1749] See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 031.
[1750] See 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 636 [sealed exhibit].
[1751] See 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 029 - 030.
[1752] See undated "About TMG," TransMontaigne Inc. website, http://www.transmontaigne.com/about-tmg/.
[1753] 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 5, http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm
[1754] Id.
[1755] 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 013.
[1756] See 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 10, http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm.

tanks located at TransMontaigne terminals; (2) storing the refined oil products in TransMontaigne tanks; (3) monitoring the volume of the refined products in the tanks; (4) disbursing the refined oil products out of the tanks using pipelines and other distribution equipment; and (5) heating residual fuel oils and asphalt stored in the tanks.[1757] In 2013, Montaigne had nearly 50 storage facilities with a total storage capacity of about 24 million barrels.[1758] It also had about 140 miles of pipeline.[1759] In addition, the website indicated that a number of the storage sites could accept or arrange oil delivery or transport via tanker truck, railway, or vessel.[1760]

Morgan Stanley told the Subcommittee that, over the years, it typically utilized 60% to 70% of TransMontaigne's available storage.[1761] In its 2013 annual SEC filing, TransMontaigne LP reported that "Together, Morgan Stanley Capital Group and TransMontaigne [are] our largest customer and we receive a substantial majority of our revenue from them."[1762] According to Morgan Stanley, in 2012, TransMontaigne – together with all of its subsidiaries – generated net revenues totaling nearly $475 million in revenue.[1763]

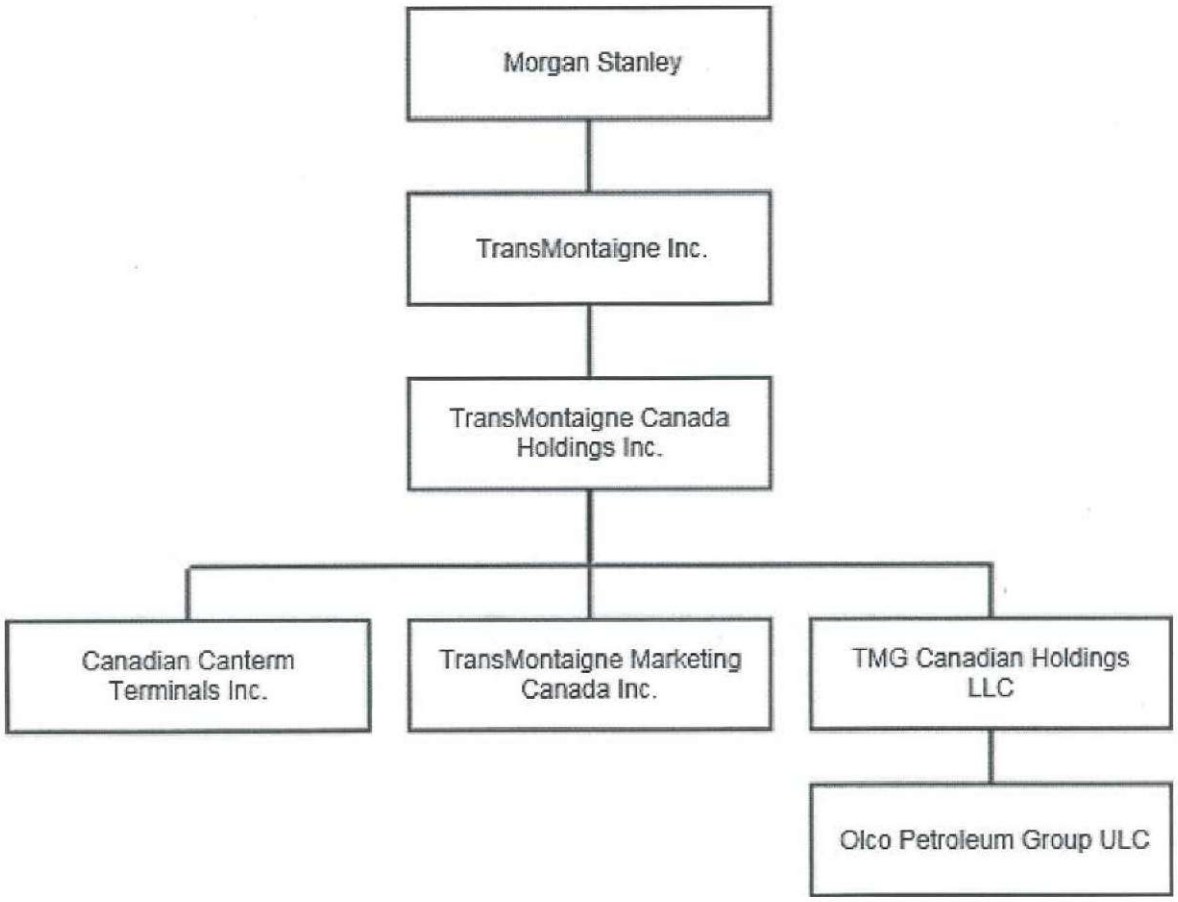
TransMontaigne Inc. is the parent corporation in the TransMontaigne group of companies. Until 2014, it was 100% owned by Morgan Stanley Capital Group Inc. which is, in turn, wholly owned by the Morgan Stanley financial holding company.[1764] Its key subsidiary was TransMontaigne LP, a publicly traded master limited partnership, over 20% of whose ownership was retained by Morgan Stanley and TransMontaigne. TransMontaigne LP owned over a dozen subsidiaries involved in oil storage, distribution, and transportation. The following chart depicts its ownership structure in 2013.[1765]

[1757] Id.
[1758] See undated "Operations Map," prepared by TransMontaigne, TransMontaigne website, http://www.transmontaigne.com/map/; Subcommittee briefing by Morgan Stanley (2/4/2014).
[1759] See undated "Pipeline Safety," TransMontaigne website, http://www.transmontaignepartners.com/about-transmontaigne-limited-partners/pipeline-safety/.
[1760] Id.
[1761] Subcommittee briefing by Morgan Stanley (2/4/2014).
[1762] 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 36, http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm.
[1763] 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-07-000001 - 034, at 017.
[1764] 2013 TransMontaigne, L.P. Annual Report, filed with the SEC on 3/11/2014, at 6, http://www.sec.gov/Archives/edgar/data/1319229/000104746914002098/a2218768z10-k.htm
[1765] Id.



TransMontaigne also had operations in Canada, held since 2010 through a wholly-owned subsidiary, TransMontaigne Canada Holdings Inc. The Canadian operations included over 60 oil terminals, plants, and pipeline operations.[1766] By 2013, TransMontaigne Canada Holdings Inc. had three subsidiaries: Canadian Canterm Terminals Inc. (CanTerm), TransMontaigne Marketing Canada Inc. (TMCI), and TMG Canadian Holdings LLC. The first two subsidiaries were acquired from Olco Petroleum, described below. The following chart depicts the Canadian companies.[1767]

[1766] See undated "Corporate Structure," TransMontaigne Marketing Canada Inc. website, http://web.archive.org/web/20131209060736/http://transmontaignecanada.ca/index-1.html.
[1767] Id.



Source: 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.

CanTerm operated two marine terminals in Montreal and Quebec City, as well as land terminals to store petroleum, chemical, and other bulk commodities.[1768] Its marine terminals offered pipeline, dock lines, truck, and railway connections as well as oil blending operations.[1769] TMCI marketed and distributed oil products like gasoline, biodiesel, and heating oil on a wholesale basis.[1770] TMG Canadian Holdings LLC owned Olco Petroleum, described below.

[1768] See 3/27/2014 Vopak press release, "Vopak acquires two distribution terminals in Canada," http://www.vopak.com/uploads/tx_vopak/news/03-27_Press_release_Canterm_UK.pdf. See also Canterm Canadian Terminals, Inc. website, http://web.archive.org/web/20130823051055/http://canterm.com/canterm/en/index.htm.

[1769] See undated "Vopak Terminals of Canada - Montreal, Quebec," Vopak website, http://www.vopak.com/north-america/vopak-terminals-of-canada-montreal-quebec-cbm.html. See also undated, "Vopak Terminals of Canada - Quebec City," http://www.vopak.com/overview/terminal-overview/north-americanorth-america/canada/north-americavopak-terminals-of-canada-quebec-city-cbm.html.

[1770] See 4/2/2013 Parkland Fuel Corporation press release, "Parkland Fuel Corporation Enters Quebec Market with New Supply Agreement and Assumption of TransMontaigne Business," http://www.parkland.ca/investors/news/news_post?source=http://parkland.mwnewsroom.com/press-releases/parkland-fuel-corporation-enters-quebec-market-wit-tsx-pki-20130402086411300l&type=1 (describing TMCI assets).

In March 2014, Morgan Stanley sold CanTerm to Vopak Terminals QC Inc.[1771] On July 1, 2014, Morgan Stanley sold the rest of TransMontaigne – other than its Canadian holdings – to NGL Energy Partners LP for $200 million plus an additional $347 million for inventory transferred at closing.[1772] NGL Energy Partners is a publicly-traded company that owns and operates a variety of energy businesses focused on oil logistics, water treatment services, and retail propane.[1773] Morgan Stanley told the Subcommittee that it sold TransMontaigne as part of its larger decision to exit the physical oil merchanting business.[1774]

Olco Petroleum. A few months after purchasing TransMontaigne, on December 15, 2006, Morgan Stanley acquired a 60% ownership stake in Olco Petroleum Group Inc. (Olco Petroleum).[1775] Founded in 1986, Olco Petroleum was a Canadian company which blended, marketed, and distributed refined oil products in Ontario and Quebec, including gasoline, propane, and biodiesel fuels.[1776] At the time of purchase, it owned a network of over 200 retail gasoline stations, some with convenience stores or carwashes, in eastern Canada.[1777] Its holdings included CanTerm, the oil marketing, terminal, and blending company, described above.[1778]

In 2006, Morgan Stanley Capital Group, Inc., through TransMontaigne, Inc., took possession of the Olco shares.[1779] In September 2008, the same month Morgan Stanley became a bank holding company, it acquired the remaining 40% of Olco Petroleum, making Olco Petroleum a wholly-owned subsidiary of TransMontaigne, Inc.[1780] Olco's gasoline stations were gradually sold, but its Canadian storage, marketing, and distribution services continued.[1781]

In 2010, Morgan Stanley reorganized Olco, which became Olco Petroleum Group ULC.[1782] That same year, TransMontaigne reorganized its Canadian holdings, creating the new holding company, TransMontaigne Canada Holdings, Inc.[1783] One of the subsidiaries of the new

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[1771] 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.
[1772] See 7/2/2014 NGL Energy Partners press release, "NGL Energy Partners LP announces completion of acquisition of TransMontaigne GP and related assets," http://www.nglenergypartners.com/investor-relations/news/. See also "Morgan Stanley to sell oil business TransMontaigne to NGL Energy," The Wall Street Journal, Justin Baer (06/09/2014), http://online.wsj.com/articles/morgan-stanley-sells-stake-in-transmontaigne-to-ngl-1402316959.
[1773] See undated "About Us," NGL Energy Partners website, http://www.nglenergypartners.com/about-us/.
[1774] Subcommittee briefing by Morgan Stanley (2/14/2014).
[1775] 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002; 2/28/2007 Morgan Stanley Quarterly Report, filed with the SEC on 4/6/2007, at 34, http://www.sec.gov/Archives/edgar/data/895421/000119312507075695/d10q.htm. See also "Morgan Stanley bought 60 pct of Olco Petroleum," Reuters (2/13/2007), http://www.reuters.com/article/2007/02/13/idUSN1316645820070213.
[1776] See undated "Company Overview of OLCO Petroleum Group Inc.," Bloomberg Businessweek, http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapid=875628.
[1777] Id.
[1778] 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.
[1779] Id.
[1780] Id.; See 2009 TransMontaigne LP Annual Report, filed with the SEC on 3/8/2010, at 12, http://www.sec.gov/Archives/edgar/data/1319229/000104746910001852/a2197078z10-k.htm
[1781] Subcommittee briefing by Morgan Stanley (2/4/2014).
[1782] 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001-005, at 002.
[1783] Id.

holding company was TMG Canadian Holdings LLC, which became the holder of 100% of the Olco shares, as depicted in the chart above.[1784] In addition, Olco's subsidiary, CanTerm, was moved out of Olco to become a stand-alone subsidiary of TransMontaigne Canadian Holdings, Inc., again as shown in the chart above.[1785]

As indicated earlier, Morgan Stanley sold CanTerm in March 2014. When Morgan Stanley sold TransMontaigne to NGL Energy Partners in July 2014, it retained TransMontaigne Canadian Holdings, Inc.[1786] As of October 2014, Morgan Stanley still owns that holding company, along with Olco Petroleum, continuing its involvement with physical oil storage facilities and pipelines in Canada.[1787]

Heidmar. In 2006, a third key acquisition by Morgan Stanley was taking 100% ownership of the Heidmar Group, Inc., a Connecticut marine logistics company which provided chartering and scheduling services for a fleet of independently owned oil transport vessels.[1788] Two years later, in 2008, Morgan Stanley sold 49% of its ownership interest to Shipping Pool Investors, Inc. and another 2% to Heidmar executives, leaving Morgan Stanley with a 49% interest in the company.[1789] Morgan Stanley representatives sit on the Heidmar Board of Directors.

Founded in 1984, Heidmar Holdings, Inc. is "one of the world's leading commercial tanker operators with a fleet of approximately 100 ships."[1790] It helps deliver "crude oil and blending components which power the world's cars, planes, trains, trucks, and heat homes around the globe."[1791] Heidmar does not own the ships it operates; it works with independent owners to form pools of vessels that service certain geographic areas.[1792] It then provides scheduling, chartering, and related logistics services for clients needing to charter a vessel either for a specific period of time or for a particular voyage.

Additionally, in 2008, Morgan Stanley purchased a "30% interest in Global Energy International Limited, a Singapore company that provides international marine services and supplies bunker fuel and other oil products through its own fleet of 23 vessels."[1793]

[1784] Id.
[1785] Id.
[1786] Id.
[1787] Id.
[1788] See 5/15/2009 "Morgan Stanley Responses to Permissibility Analysis on Commodities Activities Follow-up," prepared by Morgan Stanley for the Federal Reserve. FRB-PSI-200405 - 418, at 412; 2009 "Morgan Stanley Global Commodities Overview," FRB-PSI-618889 - 908; 7/16/ 2013 letter from Morgan Stanley legal counsel to Subcommittee. PSI-Morgan Stanley-07-000001 - 034, at 007 and 030; 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 637 [sealed exhibit].
[1789] 2012 Morgan Stanley Annual Report, filed with the SEC on 2/26/2013, at 3, http://www.sec.gov/Archives/edgar/data/895421/000119312513077191/d484822d10k.htm; undated "About," Heidmar Inc. website, http://www.heidmar.com/history/.
[1790] Undated "About," Heidmar Inc. website, http://www.heidmar.com/what-we-do/.
[1791] Id.
[1792] Id.
[1793] 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-07-000001 - 034, at 007.

Morgan Stanley relied on the ships provided by Heidmar and Global Energy to meet its oil supply obligations and to locate, buy and transport oil cargoes around the world.[1794] In 2009, Morgan Stanley shipped about 16.3 million barrels of oil per month in about 165 vessel movements, using either ships or barges.[1795] Morgan Stanley told the Subcommittee that while it used to charter about 100 vessels per month, by 2014, it was down to leasing 10 to 15 vessels per month.[1796]

Incidents. Morgan Stanley oil-related subsidiaries occasionally experienced accidents or incidents involving oil. Since 2006, TransMontaigne, has had 36 incidents recorded in the database kept by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHSMA).[1797] Two incidents resulted in consent agreements with states. The first, on October 3, 2006, involved about 70,500 gallons of regular unleaded gasoline which overflowed the top of a tank in Rogers, Arkansas; the tank was owned and operated by TransMontaigne Partners LP and its subsidiary Razorback, LLC.[1798] According to the consent agreement with the Arkansas Department of Environmental Quality (DOEQ), about 9,000 cubic yards of contaminated soil had to be excavated and treated on site.[1799] Another 17,800 gallons of gasoline were also removed.[1800] Another incident took place on January 28, 2010, when a pipeline ruptured in Fairfax County, Virginia and discharged about 280 gallons of diesel fuel into a nearby body of water.[1801] TransMontaigne paid a civil fine of about $114,000.[1802] Of the 36 incidents, six involved cargo tank crashes or derailments in which gasoline or diesel fuel were released and were considered "serious incidents" by the Hazardous Materials Information System (HMIS).[1803] There were no hazardous materials-related injuries or fatalities in those six incidents, and the total amount of damages ranged between $146,000 to $553,000.[1804]

(c) Exiting the Physical Oil Business

Morgan Stanley told the Subcommittee that, in 2013, it decided that it would refocus its commodities activities to become more "customer driven."[1805] As part of that decision, Morgan

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[1794] 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York. FRB-PSI-304627 - 645, at 634 [sealed exhibit].
[1795] Id.
[1796] Subcommittee briefing by Morgan Stanley (2/4/2014).
[1797] See 10/27/2014 "Incident Reports Database Search," PHSMA Office of Hazardous Materials Safety website, https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/search.aspx (using search term "TransMontaigne" in the classification of "Shipper/Offeror").
[1798] In re TransMontaigne Partners, L.P., Arkansas Department of Environmental Quality, Consent Administrative Order, at 2 (5/19/2010), http://www.adeq.state.ar.us/ftproot/Pub/WebDatabases/Legal/CAO/LIS_Files/10-086.pdf.
[1799] Id.
[1800] Id.
[1801] State Water Control Board Enforcement Action – Order by Consent Issued to TransMontaigne Operating Company L.P. at 3, Virginia Department of Environmental Quality (8/4/2011), http://www.deq.virginia.gov/Portals/0/DEQ/Enforcement/FinalOrders/TransMontaigneOperatingAug042011.pdf.
[1802] Id. at 4.
[1803] See 10/27/2014 "Incident Reports Database Search," PHSMA Office of Hazardous Materials Safety website, https://hazmatonline.phmsa.dot.gov/IncidentReportsSearch/search.aspx (using search term "TransMontaigne" in the classification of "Shipper/Offeror," and selecting for crashes or derailments).
[1804] Id.
[1805] Subcommittee briefings by Morgan Stanley (2/4/2014 and 9/11/2014).

Stanley told the Subcommittee that "Morgan Stanley has decided to exit certain of its physical commodities business lines, including its global physical oil merchanting business and its investment in TransMontaigne, Inc."[1806]

Declining Revenues. In 2009, a Federal Reserve examination reported that Morgan Stanley's global oil business had produced nearly 60% of the revenues generated by the Commodities group and called it "the most important source of revenues."[1807] According to Morgan Stanley, while its oil liquids business has generated revenues and profits in every fiscal year since 2008, its revenues and profits have steadily declined.[1808] The following chart shows the decline in revenues:

Morgan Stanley Oil Desk Net Revenues
2008-2013

Fiscal Year	Net Revenues
2008	$1.3 billion
2009	$1.2 billion
2010	$822 million
2011	$677 million
2012	$676 million

Source: 7/16/2013 and 10/17/2014 letters from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 005 and PSI-MorganStanley-19-000001 - 005, at 003.

To implement its decision to exit the physical oil business, as explained earlier, in July 2014, Morgan Stanley sold TransMontaigne to NGL Energy Partners, although it retained some assets, including TransMontaigne's holdings in Canada.[1809] Morgan Stanley also attempted to sell to Rosneft Oil Company a number of the global physical oil assets held by Morgan Stanley Commodities, primarily through Morgan Stanley Capital Group, Inc. in the United States, and by Morgan Stanley International Holdings, Inc. internationally.[1810]

Morgan Stanley entered into a sales agreement with a subsidiary of Rosneft Oil Company on December 20, 2013.[1811] Rosneft is a Russian state-owned corporation that is the country's

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[1806] 9/19/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-13-000001 - 009, at 003.
[1807] 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 633 [sealed exhibit]. See also 5/7/2009 "Global Commodities Overview," prepared by Morgan Stanley, FRB-PSI-618889 - 908, at 897.
[1808] 7/1/2013 letter from Morgan Stanley to FRBNY, FRB-PSI-302759 - 768, at 768; 10/17/2014 letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-19-000001 - 005, at 003.
[1809] See 10/17/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-19-000001 - 005, at 002.
[1810] See 10/10/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-17-000001 - 003, at 002.
[1811] See 12/20/2013 Morgan Stanley press release, "Morgan Stanley to Sell Global Oil Merchanting Business to Rosneft," http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aac3.html.

largest petroleum company and third largest gas producer.[1812] The agreement covered Morgan Stanley's physical oil inventories, storage leases, shipping charters, blending services, supply contracts, and its 49% stake in Heidmar, among other assets.[1813] The transaction was expected to close during the second half of 2014, after regulatory approvals.[1814] The Federal Trade Commission provided its approval on June 17, 2014.[1815] The European Commission provided its approval on September 4, 2014.[1816]

In March 2014, however, as a result of Russia's incursion into Ukraine's Crimean peninsula, the United States Government imposed sanctions on a number of Russian individuals and entities, including companies that operate in the energy sector.[1817] In September 2014, the United States expanded the sanctions, specifically naming Rosneft as one of the energy companies.[1818] Morgan Stanley has indicated publicly that, because of the sanctions, the sale may not be finalized.[1819] If the sale is not concluded, Morgan Stanley has indicated it will continue to look for a buyer.

(3) Issues Raised by Morgan Stanley's Crude Oil Activities

Morgan Stanley's physical oil activities raise multiple concerns, including the wholesale mixing of banking and commerce; financial, operational and catastrophic event risks; insufficient capital and insurance coverage to protect against potential losses; conflicts of interest arising from controlling crude oil supplies while trading crude oil financial instruments; and the need for stronger safeguards.

[1812] See 7/16/2014 U.S. Department of the Treasury press release, "Announcement of Treasury Sanctions on Entities Within the Financial Services and Energy Sectors of Russia, Against Arms or Related Materiel Entities, and those Undermining Ukraine's Sovereignty," http://www.treasury.gov/press-center/press-releases/Pages/jl2572.aspx.

[1813] Subcommittee briefing by Morgan Stanley (2/14/2014). See also 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm; 12/20/2013 Morgan Stanley press release, "Morgan Stanley to Sell Global Oil Merchanting Business to Rosneft," http://www.morganstanley.com/about/press/articles/00ddb583-1c3c-4dd9-b27f-6023c884aae3.html.

[1814] See 6/30/2014 Morgan Stanley Quarterly Report, filed with the SEC on 8/5/2014, at 113, http://www.sec.gov/Archives/edgar/data/895421/000119312514295874/d763478d10q.htm.

[1815] 6/17/2014 "20141062: Rosneft Oil Company; Morgan Stanley," Federal Trade Commission Premerger Notification Program, FTC website, http://www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices/20141062.

[1816] "EU executive clears acquisition of Morgan Stanley's oil unit by Rosneft," Reuters, (9/4/2014), http://www.reuters.com/article/2014/09/04/us-rosneft-morgan-stanley-idUSKBN0GZ0ZP20140904.

[1817] See undated "Ukraine and Russia sanctions," U.S. Department of State website, http://www.state.gov/e/eb/tfs/spi/ukrainerussia/.

[1818] See 9/12/2014 U.S. Department of the Treasury press release, "Announcement of Expanded Treasury Sanctions within the Russian Financial Services, Energy, and Defense or Related Material Sectors," http://www.treasury.gov/press-center/press-releases/pages/jl2629.aspx. "Treasury has also imposed sanctions that prohibit the exportation of goods, services (not including financial services), or technology in support of exploration or production for Russian deepwater, Arctic offshore, or shale projects that have the potential to produce oil, to five Russian energy companies – Gazprom, Gazprom Neft, Lukoil, Surgutneftegas, and Rosneft – involved in these types of projects." Id.

[1819] See, e.g., "Morgan Stanley says 'no assurance' Rosneft deal will close," Reuters (10/10/2014), http://www.reuters.com/article/2014/10/10/morgan-stanley-rosneft-idUSL2N0S524L20141010.

(a) Mixing Banking with Commerce

Morgan Stanley spent 25 years building a vast physical oil business, involving producing, refining, storing, transporting and supplying oil products. That vast commercial physical oil enterprise is not the type of financial activity that, under U.S. law and practice, was envisioned as appropriate for a bank or bank holding company.

Because Morgan Stanley was immersed in physical oil activities prior to 1997, and was still engaged in them when it converted to a bank holding company in 2008, those activities are more appropriately protected from divestiture by the Gramm-Leach-Bliley grandfather clause than, for example, its compressed natural gas venture which was begun five years after it became a bank holding company. But even those Morgan Stanley commercial business activities that are protected by grandfather status raise the same concerns that led to bans on mixing banking with commerce in the first place. Those concerns include, as discussed in Chapter 2, unfair economic advantages due to the bank holding company's access to inexpensive credit from its subsidiary bank; unfair informational advantages due to the bank holding company's access to non-public information from its commercial and client activities; conflicts of interest that can arise between the bank holding company and its clients when competing commercially; potential distortions of credit decisions by an affiliated bank that wants to support its holding company; the dangers of market manipulation; increased bank and systemic risks arising from industrial activities; and the undue concentration of economic power that results when a bank holding company becomes a major player, not only in the provision of credit, but also in a vital energy sector. On top of those concerns is the reality of a bank holding company with so many complex enterprises in so many geographic areas that it becomes too big to manage or regulate.

In its 2012 report, the FRBNY Commodities Team that conducted the broad review of financial holding company involvement with physical commodities expressed "[s]upervisory [c]oncerns" that their engagement in "commercial/physical commodity activities breaches the separation of banking and commerce and place[s] industrial activities within the federal safety net."[1820]

As stated earlier, to conduct its physical oil activities, Morgan Stanley has relied on the grandfather clause. The grandfather clause has one built-in safeguard – a volume limit prohibiting grandfathered activities from exceeding 5% of the holding company's consolidated assets. For Morgan Stanley, that limit is so high – 5% of $833 billion or $41 billion – that it functions as no limit at all.[1821] While the Federal Reserve could have imposed a lower limit to ensure grandfathered activities are operated in a safe and sound manner, it has not yet done so.

[1820] 2012 Summary Report, at FRB-PSI-200477 – 510, at 482 [sealed exhibit]. See also undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 - 454, at 429 [sealed exhibit] (expressing concern about "industrial activities [that have] created new and increased potential liability for firms with access to the federal safety net supporting the banking system").

[1821] See 6/30/2014 "Consolidated Financial Statements for Holding Companies," Form FR Y-9C, filed by Morgan Stanley with the Federal Reserve, Federal Reserve website, http://www.ffiec.gov/nicpubweb/nicweb/FinancialReport.aspx?parID_RSSD=2162966&parDT=20140630&parRptType=FRY9C&redirectPage=FinancialReport.aspx .

The details of Morgan Stanley's physical oil activities illustrate how far financial holding companies have been allowed to cross the line between banking and commerce. While Morgan Stanley is currently reducing its physical oil activities, other banks may attempt to enter the physical oil business, unless better safeguards are put in place.

(b) Multiple Risks

Morgan Stanley's physical oil business creates multiple risks that don't normally confront a bank. Oil products are flammable and explosive. Oil spill and other catastrophic event risks surround multiple aspects of Morgan Stanley's physical oil activities, from oil transport ships, tanker trucks, and railway cars, to ruptured pipelines and storage facilities. Financial risks also pose a threat, especially in the case of huge oil inventories. From September to October 2014, crude oil prices fell 20%, from about $100 to $80 per barrel, immediately depressing the dollar value of physical inventories and disrupting the economics of oil transport and supply contracts.

Valuation risks are another area of concern. In 2009, Federal Reserve examiners reviewing Morgan Stanley's physical commodities activities wrote:

> "Examiners noted complex risks around valuation and risk measurement of the oil storage business. Market risk involved appears material; as per 2008 backtesting results, the Firm lost $152 [million] on a single trading day … attributable to market movements in oil storage. Furthermore, differences exist in the income recognition regimes between GAAP accounting, which requires marking oil in storage to spot prices, and Morgan Stanley's internal economic valuation based on the oil storage model …."[1822]

Still another set of concerns involves Morgan Stanley's efforts to mitigate the risks posed by its physical oil activities, including from an oil-related incident. The Federal Reserve Commodities Team found that Morgan Stanley, among other financial holding companies, had allocated insufficient levels of capital and insurance to cover potential losses. The 2012 Summary Report noted at one point that, while Morgan Stanley had calculated a potential oil spill risk of $360 million, through "aggressive assumptions" and "diversification benefits," it had reduced that total by nearly 70% to $54 million, allocating risk capital for only that much smaller amount.[1823] The 2012 Summary Report also noted that insurance for catastrophic events in oil shipping is typically capped at $1 billion, "and firms cannot cover any amount beyond the cap through insurance."[1824] In addition, the Federal Reserve Commodities Team determined that the potential losses associated with an "extreme loss scenario" at four financial holding companies, including Morgan Stanley, would exceed the capital and insurance coverage at each financial holding company by $1 billion to $15 billion.[1825] That shortfall leaves the Federal Reserve, and

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[1822] 5/4/2009 "Morgan Stanley Commodities Risk Control Validation Target Exam," prepared by Federal Reserve Bank of New York, FRB-PSI-304627 - 645, at 629 [scaled exhibit].
[1823] 2012 Summary Report, at FRB-PSI-200477 – 510 , at 493 - 494 [scaled exhibit].
[1824] Id. at 491.
[1825] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

U.S. taxpayers, at risk of having to provide financial support to Morgan Stanley should a catastrophic event occur.

In addition to the catastrophic event, valuation, insurance and capital concerns, the Morgan Stanley case history shows how a multi-million-dollar sale of oil assets can collapse from unrelated political events. Even exiting the business has risks.

(c) Conflicts of Interest

Morgan Stanley has stated openly that its physical oil activities provide valuable market information to its traders in the financial markets. Here's how one 2005 article described Morgan Stanley's physical commodity activities and comments by one of its leaders, John Shapiro:

> "Having access to barges and storage tanks and pipelines gives the bank additional options, to move or store commodities, that most energy traders don't pursue. And by having its finger on the pulse of the business, it hopes to get a more subtle feel for the market, a crucial asset to a trader.
>
> 'Being in the physical business tells us when markets are oversupplied or undersupplied,' says Mr. Shapiro. 'We're right there seeing terminals filling up and emptying.'"[1826]

A Federal Reserve analysis made a similar point, noting:

> "The relationship of the firms [Morgan Stanley and Goldman] with their wholly and partially owned companies is not that of a passive investor. In addition to the financial return, these direct investments provide MS [Morgan Stanley] ... with important asymmetrical information on conditions in the physical markets such as production and supply/demand information, etc., which a market participant without physical global infrastructure would not necessarily be privy to."[1827]

While U.S. commodities laws do not bar the use of non-public information by traders in the financial markets in the same way as securities laws, concerns about unfair trading advantages deepen when the commodities trader is a major financial institution with access to significant non-public information.

Additional questions involve whether any Morgan Stanley personnel ever stepped over the line by playing the physical markets off the financial markets to manipulate oil prices.[1828] Those types of suspicions would not arise if Morgan Stanley were not trading in both the physical and financial oil markets at the same time.

[1826] "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/news/articles/SB110971828745967570.

[1827] Undated but likely early 2011 "Comparison of Risks of Commodity Activities at Morgan Stanley and Goldman Sachs between 1997 to Present," prepared by Federal Reserve, FRB-PSI-200428 - 454, at 439 [sealed exhibit].

[1828] See, e.g., "U.S. Suit Sees Manipulation of Oil Trades," New York Times, Graham Bowley (5/24/2011), http://www.nytimes.com/2011/05/25/business/global/25oil.html?_r=0 (discussing cases charging market manipulation of oil prices).

(4) Analysis

The three financial holding companies examined by the Subcommittee were heavily involved with both financial and physical oil activities. While Morgan Stanley is currently reducing those activities, it still operates a vast physical oil business. Physical oil activities raise a host of troubling questions, from catastrophic event risks to valuation problems to financial risks to market manipulation issues. The risks permeating the physical oil business call out for increased capital and insurance to cover potential losses and protect taxpayers from being asked to step in after a disaster. Market manipulation opportunities require additional oversight and preventative safeguards. It is past time for the Federal Reserve to provide guidance on the scope of the grandfather clause and enforce overdue safeguards on this high risk physical commodity activity.

D. Morgan Stanley Involvement with Jet Fuel

Morgan Stanley has sometimes explained the benefits of its participation in physical oil activities by highlighting its role in providing jet fuel to an airline during and after bankruptcy.[1829] Morgan Stanley has been involved with physical jet fuel for many years, as a subset of the physical oil activities examined in the prior section. While its jet fuel supply, transport, credit intermediation, and hedging services have sometimes benefited airlines, they have also at times imposed costs that hurt rather than helped the airlines involved. In two specific cases reviewed by the Subcommittee, the airlines appear to have determined that Morgan Stanley's services were not worth the cost and have discontinued their participation in jet fuel agreements with Morgan Stanley.

(1) Background on Jet Fuel

Jet fuel is one of several specialized types of fuel derived from crude oil.[1830] During the refining process, a complex separation procedure divides crude oil into materials needed for several types of refined oil products, including jet fuel.[1831] The separation process takes place at crude oil refineries which then store the resulting jet fuel until it is shipped.[1832] Due to the many different crude oils and refining procedures available, many different grades of jet fuel can be produced. Morgan Stanley has identified 80 different jet fuel markets around the world.[1833]

The primary commercial end-users of jet fuel are airlines. In recent years, jet fuel has also become the largest annual expense for many airlines. One major domestic airline told the Subcommittee that its fuel costs were by far its largest expense, totaling $12 billion in 2013, roughly 34% of its total annual expenses.[1834] A non-U.S. airline also identified jet fuel as its largest expense, reporting 2013 jet fuel costs of nearly $8.35 billion, 39% of its operating costs.[1835]

[1829] See, e.g., 4/17/2014 public comment letter submitted by Morgan Stanley to the Federal Reserve in connection with the Federal Reserve's Advance Notice of Proposed Rulemaking on Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies Related to Physical Commodities (hereinafter, "2014 Morgan Stanley Public Comment Letter"), at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

[1830] 10/24/2011 presentation, "An Introduction to Petroleum Refining and the Production of Ultra Low Sulfur Gasoline and Diesel Fuel," prepared by MathPro, Inc. for the International Council on Clean Transportation, at 2, http://www.theicct.org/sites/default/files/publications/ICCT05_Refining_Tutorial_FINAL_R1.pdf.

[1831] Id.

[1832] Id.

[1833] 2014 Morgan Stanley Public Comment Letter, at 6.

[1834] Subcommittee briefing by United Airlines (10/9/2014). See also 2/20/2014 United Airlines10-K filing with the SEC, at 6, http://ir.unitedcontinentalholdings.com/phoenix.zhtml?c=83680&p=irol-SECText&TEXT=aHR0cDovL2FwaS50ZW5rd2l6YXJkLmNvbS9maWxpbmcucG1sP2lwYWdlPTk0MTAxMzgmRFNFUT0wJlNFUT0wJlNRREVTQzITRUNUSU9OX0VOVElSRSZzdWJzaWQ9NTc%3d#tx624298_10 (listing its 2013 jet fuel-related expenses as $13.14 billion and its total operating expenses in 2013 as $37 billion).

[1835] 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001; See 2013 - 2014 Annual Report, Emirates Group, at 52, http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2014.pdf.

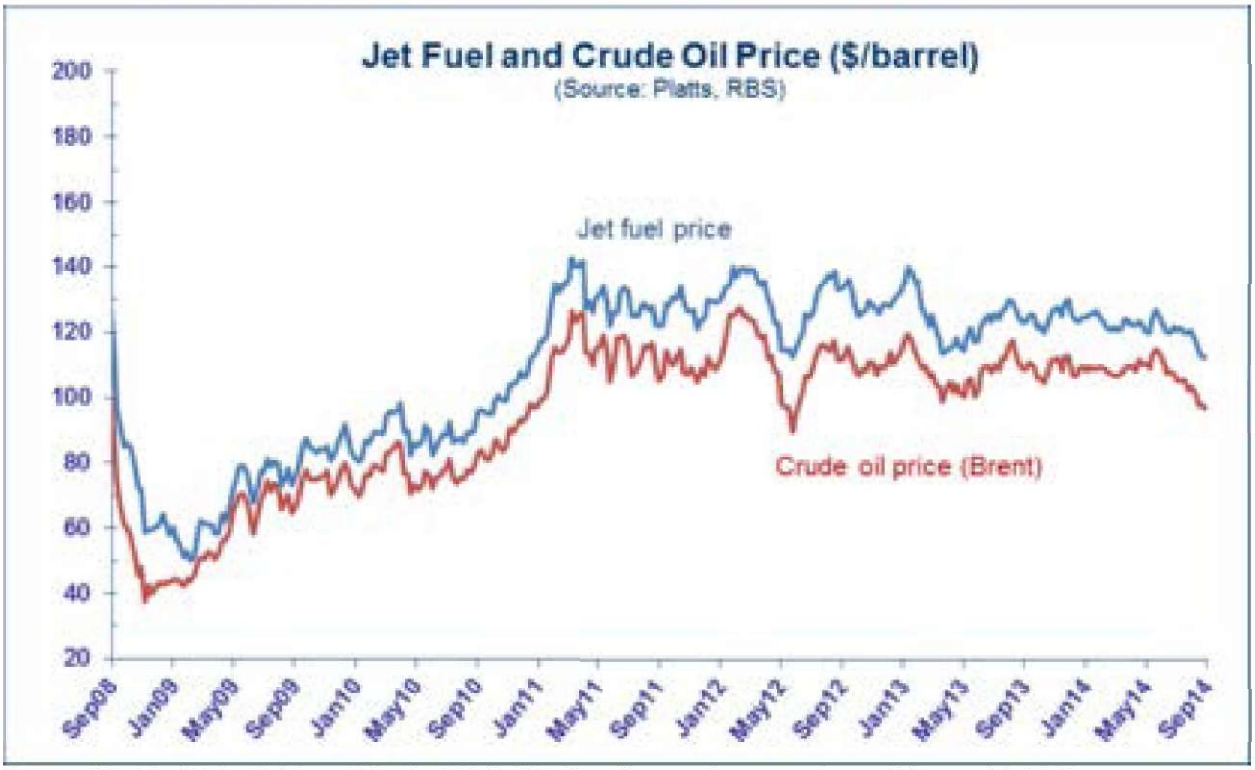
Supplying and Transporting Jet Fuel. Most jet fuel suppliers are large oil or refining companies, including BP, Chevron, Exxon, Shell and Valero, which are not only involved in the production of jet fuel, but also typically have arrangements in place to transport the fuel to the airports where it is needed.[1836]

Jet fuel is most commonly transported via pipelines, oil transport vessels, or tanker trucks.[1837] After being refined, jet fuel suppliers typically transport the fuel to one of several large oil storage facilities in the United States.[1838] From there, the fuel is typically transported to storage tanks at airports.[1839] Since each phase of transportation and storage could corrupt the quality of the fuel, each phase is heavily regulated, and the jet fuel is closely monitored.[1840]

Transporting jet fuel requires adherence to a special set of operation and maintenance requirements.[1841] For example, jet fuel transportation pipelines must operate within strict parameters for flow rate, pressurization, filtration, and internal coating to mitigate corrosion.[1842] Jet fuel is also classified as a "static accumulator," and requires treatment with certain additives while in transit to prevent issues with its electrical conductivity.[1843] Airports are also subject to extensive regulation regarding how jet fuel is to be delivered, stored, and dispensed for end use.[1844]

Jet Fuel Prices. Jet fuel prices have a history of volatility. Jet fuel prices vary across the country and experienced 20% price swings in 2013.[1845] Typically, the price of jet fuel is determined by referencing the average price from the previous week as recorded by Platts, an information company that provides benchmark price assessments for a variety of commodities.[1846] Because the jet fuel market is relatively small, analysts often use the price of crude oil as an indicator for the price of jet fuel. The recent 20% drop in crude oil prices could translate into lower jet fuel prices as well.[1847] The following chart tracks the jet fuel price changes over the past five years.

[1836] Subcommittee briefing by United Airlines (10/9/2014).
[1837] "Jet Fuel Pipelines and Storage Require Special Operation. Maintenance Considerations," Anup Sera & Mott MacDonald, Pipeline and Gas Journal. Volume 236 No. 12 (December 2009), http://www.pipelineandgasjournal.com/jet-fuel-pipelines-and-storage-require-special-operation-maintenance-considerations?page=show.
[1838] Id.
[1839] Id.
[1840] Id.
[1841] Id.
[1842] Id.
[1843] Id.
[1844] See, e.g., "Standard for Aircraft Fuel Servicing," National Fire Prevention Association §407(4)-(5) (2012); "Standard for Jet Fuel Quality Control at Airports," Air Transport Association of America, Specification 103, Revision 2006.1 (2006); see also "Are You Complying With Jet Fuel Regulations?," Millennium Systems International (10/3/2014), http://www.millenniumsystemsintl.com/techarticles/airbeat_julaug03.htm.
[1845] See "US Airlines Find Fuel for Less in 2013 … But Not Everywhere," Platts: The Barrel Blog, Matt Kohlman (8/2/2013), http://blogs.platts.com/2013/08/02/jet-shifts/. See also "Spot Prices: Crude Oil in Dollars per Barrel, Products in Dollars per Gallon," U.S. Energy Information Administration website (10/29/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm. .
[1846] Subcommittee briefing by United Airlines (10/9/2014).
[1847] "Spot Prices: Crude Oil in Dollars per Barrel, Products in Dollars per Gallon," U.S. Energy Information Administration website (10/29/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.



Source: "Jet Fuel Price," AirportWatch (10/8/2014), http://www.airportwatch.org.uk/?page_id=2092.

In the financial markets, jet fuel can be traded through futures, options, swaps, and forwards, both on exchange and over-the-counter. The New York Mercantile Exchange (NYMEX) lists several types of jet fuel options and futures.[1848] The IntercontinentalExchange (ICE) lists 19 different jet fuel swap contracts.[1849] The financial market for jet fuel is substantially smaller than the financial market for crude oil, with fewer participants and outstanding contracts.[1850]

U.S. airlines are active in both the physical and financial jet fuel markets. The Subcommittee was told that, today, U.S. airlines employ a number of different methods to hedge their jet fuel costs. Many airlines hedge only a portion of their fuel for only specified periods of time. Of the major U.S. airlines, for example, United Airlines generally hedges a portion of its jet fuel costs for the next year; Southwest Airline generally hedges a portion of its jet fuel costs for the next four to five years; and Delta Airlines, which purchased its own jet fuel refinery in 2012, trades aggressively in the jet fuel markets on an ongoing basis; while U.S. Airways and

[1848] See "CME Group All Products – Codes and Slate," CME Group (10/2/2014), http://www.cmegroup.com/trading/products/#pageNumber=1&sortField=oi&sortAsc=false&subGroup=18.
[1849] See "ICE OTC Products List: Crude Oil and Refined Products," Intercontinental Exchange (8/2012), https://www.theice.com/publicdocs/ICE_OTC_Cleared_Product_List.pdf.
[1850] Compare "Gulf Coast Jet (Platts) Up-Down Volume," CME Group (10/20/2014), http://www.cmegroup.com/trading/energy/refined-products/gulf-coast-jet-fuel-vs-nymex-no-2-heating-oil-platts-spread-swap_quotes_volume_voi.html (listing 100 total jet fuel futures contracts traded on the NYMEX October 20, 2014); with "Crude Oil Volume," CME Group (October 20, 2014), http://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude_quotes_volume_voi.html?foi=O&41927.50656= (listing almost 595,000 total crude oil futures and options traded on the NYMEX during the same time frame).

American Airlines have generally stopped hedging altogether.[1851] Those differing approaches indicate there is no consensus among end-users on how to effectively control jet fuel price risks.

Jet Fuel Incidents. In addition to financial risks, jet fuel poses both safety and environmental risks. Jet fuel is categorized as a combustible, highly toxic material subject to regulation under the federal Toxic Substances Control Act.[1852] It is extremely flammable both as a liquid and a gas, and exposure to certain oxidizing agents or sources of ignition can result in a flash fire or explosion.[1853] Handling the fuel involves exposure to toxic substances and can result in physical infirmities.[1854] Transporting high volumes of jet fuel carries the risk of a large-scale environmental incident, such as an oil spill. Jet fuel incidents cover a variety of fact patterns. Incidents include a tanker truck crash that released 10,000 gallons of jet fuel that ignited and engulfed a highway ramp;[1855] a 2010 spill of jet fuel from a tanker truck crash in Massachusetts;[1856] an emergency release of 5,000 gallons of jet fuel into U.S. waters by an aircraft during an emergency landing;[1857] the theft of a jet fuel tanker truck from a Houston airport;[1858] and a jet fuel contamination event that caused landing difficulties for an aircraft carrying 322 passengers.[1859]

(2) Morgan Stanley Involvement with Jet Fuel

Morgan Stanley has been participating in physical jet fuel activities since at least 2003. Since then it has stored and transported millions of barrels of jet fuel per year, while participating in financial transactions to hedge volatile jet fuel costs. Over a ten-year period from 2003 to 2013, Morgan Stanley became the primary jet fuel supplier for United Airlines. For a four-year period, from 2004 to 2008, it entered into a series of hedges with the airline Emirates to manage its price risks. In both cases, Morgan Stanley's activities produced mixed results for the airlines.

[1851] See, e.g., "US Airlines are Taking the Hedge Off on Jet Fuel." Platts. Matthew Kohlman, David Elward, and Su Yeen Chong (9/1/2014). http://blogs.platts.com/2014/09/01/us-airlines-hedging/; "How Delta Bought A Refinery And Wound Up Saving Its Rivals A Ton Of Cash." Business Insider. Benjamin Zhang (9/1/2014), http://www.businessinsider.com/delta-airlines-fuel-prices-2014-8#ixzz3GhARNyYq; "The 'Fixer' at Southwest Airlines," CNBC, Kate Kelly (5/2/2012), http://www.cnbc.com/id/47254760#.; Subcommittee briefing by United Airlines (10/9/2014).

[1852] "Jet Fuel/Kerosene Hazards Identification," J.P. Morgan Ventures Energy Corporation (6/2/2008), at 9-11, https://www.jpmorgan.com/cm/BlobServer/commodities_jetfuel.pdf?blobkey=id&blobwhere=1158593470387&blobheader=application/pdf&blobheadername1=Cache-Control&blobheadervalue1=private&blobcol=urldata&blobtable=MungoBlobs.

[1853] Id. at 7.

[1854] Id. at 5-9.

[1855] 3/13/2001 Rhode Island Department of Environmental Management press release, "Driver of Tanker Truck Charged; Tipover Caused Major Jet Fuel Spill Last Summer," http://www.dem.ri.gov/news/2001/pr/0313012.htm.

[1856] See, e.g., 6/2010 "After Incident Report[:] Foxboro Jet Fuel Tanker Spill," prepared by MassDEP Field Assessment and Support Team, http://www.mass.gov/eea/docs/dep/cleanup/sites/fox610.pdf.

[1857] See, e.g., 5/6/2009 Washington State Department of Ecology press release, "Ecology will not take enforcement action against Asiana Airlines," http://www.ecy.wa.gov/news/2009news/2009-102.html.

[1858] See, e.g., "Trespasser jumps fence, steals truck with jet fuel from Hobby Airport," KHOU.com news station (7/24/2014), http://www.khou.com/story/news/investigations/2014/07/29/12673286/.

[1859] Undated description of 4/13/2010 incident, "A333, Hong Kong China, 2010 (LOC RE GND FIRE)," Skybrary, http://www.skybrary.aero/index.php/A333,_Hong_Kong_China,_2010_(LOC_RE_GND_FIRE). See also undated "Misfueling," prepared by AOPA Air Safety Foundation, http://www.aopa.org/-/media/Files/AOPA/Home/Pilot%20Resources/ASI/Safety%20Briefs/SB04.pdf.

United eventually ended its fuel supply agreement with Morgan Stanley, after determining it could procure its own jet fuel at a lower cost. Emirates eventually ended its jet fuel hedging with Morgan Stanley after its hedging led to an unexpected $440 million expense for the airline.

(a) Storing, Supplying, and Transporting Jet Fuel Generally

Morgan Stanley has acted as a jet fuel supplier for airlines since at least 2003, when it won a contract to supply jet fuel to United Airlines.[1860] In 2005, a media report provided this description of its efforts:

> "United Airlines, fighting intense financial pressure, decided in late 2003 it needed a better way to get fuel to its planes. To get that job done, it went to an unusual place: Morgan Stanley.
>
> Now, employees of the bank scour the world for jet fuel for the airline. They charter barges, lease pipelines and schedule tanker trucks, delivering more than a billion gallons a year to United's hubs. They even send inspectors to make sure no one tampers with the stuff."[1861]

Morgan Stanley told the Subcommittee that, between 2008 and 2012, it maintained jet fuel inventories of between 4 million and 10.6 million barrels per year.[1862] The following chart shows those jet fuel inventories peaking in 2009, maintaining high volumes in 2010 and 2011, and then declining in 2012:

Morgan Stanley Physical Jet Fuel Inventories
2008-2012

Jet Fuel/Kerosene	2008	2009	2010	2011	2012
Barrels in Storage	4.6 million	10.6 million	6.6 million	5.8 million	4.0 million
Dollar Value	$272 million	$934 million	$703 million	$713 million	$521 million
Barrels in Transit	2.6 million	6.6 million	6.5 million	5.7 million	4.1 million
Dollar Value	$165 million	$594 million	$700 million	$709 million	$532 million

Source: 7/16/2013 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-03-000002 - 003.

Morgan Stanley told the Subcommittee that it stored its jet fuel at over 50 storage facilities across the United States, Canada, Europe, and Asia.[1863] They included a small number of facilities managed by its then wholly-owned subsidiary, TransMontaigne, which had multiple

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[1860] Subcommittee briefing by Morgan Stanley (2/4/2014). In a 2010 letter to the Federal Reserve, Morgan Stanley asserted that it had engaged in physical and financial trading of jet fuel "as of September 30, 1997," but did not provide any specific evidence showing that it handled physical jet fuel on or before that date. See 7/8/2010 letter from Morgan Stanley to the Federal Reserve, FRB-PSI-200173 - 182, at 174.

[1861] "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/article/0,,SB110971828745967570,00.html.

[1862] 7/16/2013 Letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 002 - 003, 022.

[1863] 4/12/2013 letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-04-000001 - 007, at 005 - 007; Subcommittee briefing by Morgan Stanley (2/4/2014).

sites in the United States;[1864] by its indirect subsidiary, Canterm Canadian Terminals, which had storage facilities in Canada;[1865] and by Aircraft Fuel Supply B.V., a Dutch company which stored jet fuel in the Netherlands and in which Morgan Stanley held a minority ownership interest.[1866]

Morgan Stanley also indicated that, between 2008 and 2012, it transported up to 6.6 million barrels of jet fuel per year, as shown in the above chart.[1867] Morgan Stanley told the Subcommittee that it purchased jet fuel in markets around the world, and often transported the fuel by ship to other markets, including ships chartered through its subsidiaries, Heidmar and Global Energy International.[1868] Its search for lower-cost jet fuel cargoes was illustrated in a 2011 news report which noted that Morgan Stanley had purchased two jet fuel cargoes in Singapore, each containing "100,000 barrels at 10 cents a barrel over benchmark quotes, the smallest premium in a week."[1869] Morgan Stanley was reported as obtaining lower prices than two other firms described in the article.[1870]

According to Morgan Stanley, since 2003, it has supplied jet fuel to a variety of airlines, including United Airlines, US Airways, American Airlines, Emirates, Southwest Airlines, and Societe Air France. To better understand Morgan Stanley's involvement with jet fuel, the Subcommittee examined more closely its interactions with two of those airlines, United and Emirates.

(b) Supplying Jet Fuel to United Airlines

Morgan Stanley, through its subsidiary Morgan Stanley Capital Group Inc., first entered into a long-term contract to supply jet fuel to United Airlines in 2003.[1871] Prior to that agreement, United Airlines had been procuring jet fuel for its own operations,[1872] and, according to Morgan Stanley, maintaining up to a month's inventory of fuel which was "creating significant operational overhead and a need for costly financing."[1873] In 2003, while United Airlines was maintaining that inventory and transporting jet fuel, its parent corporation was

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[1864] See discussion in prior section about TransMontaigne.
[1865] See discussion in prior section about Canterm.
[1866] 8/1/2013 Letter from Morgan Stanley legal counsel to the Subcommittee. PSI-MorganStanley-08-000001.
[1867] 7/16/2013 Letter from Morgan Stanley legal counsel to the Subcommittee, PSI-MorganStanley-07-000001 - 034, at 002-003, 022.
[1868] Subcommittee briefing by Morgan Stanley (2/4/2014). See also discussion in prior section about Heidmar and Global Energy International; 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.
[1869] "Morgan Stanley Buys Jet Fuel at Reduced Premium: Oil Products," Bloomberg, Yee Kai Pin (10/20/2011), http://www.bloomberg.com/news/2011-10-20/morgan-stanley-buys-jet-fuel-at-reduced-premium-oil-products.html.
[1870] Id.
[1871] Feb. 2013 Morgan Stanley Commodities: Business Overview, PSI-MorganStanley-01-000001 - 027, at 010; 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122; Subcommittee briefing by United Airlines (10/9/2014).
[1872] Subcommittee briefing by United Airlines (10/9/2014). See also "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal, Ann Davis (3/2/2005), http://online.wsj.com/article/0,,SB110971828745967570,00.html.
[1873] 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

undergoing bankruptcy reorganization.[1874] In an effort to free up the cash required to maintain its fuel supply operations, United Airlines issued a general solicitation seeking bids on a contract to take over that function.[1875] Morgan Stanley won the contract, which was finalized in early 2004, and approved by the bankruptcy court.[1876]

Supplying the Jet Fuel. The agreement originally had a term of three years.[1877] Under the agreement, United transferred virtually all of its jet fuel assets to Morgan Stanley, including a jet fuel inventory then worth several hundred million dollars, storage tanks at various locations, pipeline space, supply agreements, and trading activity, in exchange for a large cash payment from Morgan Stanley.[1878] Morgan Stanley, for its part, promised to supply jet fuel to United at market prices using the average jet fuel price during the prior week published by Platts, with a differential added for certain locations.[1879] United generally paid Morgan Stanley shortly before delivery of the fuel.[1880]

Morgan Stanley agreed to deliver the jet fuel at specified locations, including directly to storage tanks at some airports.[1881] Morgan Stanley also agreed to purchase any excess stored jet fuel from United.[1882] Morgan Stanley bore title and all "risk of loss" for the jet fuel stored at an airport location until United removed the jet fuel from the airport storage facility.[1883]

United and Morgan Stanley told the Subcommittee that, under the agreement, Morgan Stanley supplied "most" of United's domestic fuel needs, but not all.[1884] United explained that, for example, at O'Hare Airport where it had substantial fuel requirements, Morgan Stanley typically delivered a two-week fuel supply right to the airport and allowed United to draw it

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[1874] Subcommittee briefing by United Airlines (10/9/2014). See also "Morgan Stanley Trades Energy Old-Fashioned Way: In Barrels," Wall Street Journal. Ann Davis (3/2/2005). http://online.wsj.com/article/0,,SB110971828745967570,00.html.

[1875] Subcommittee briefing by United Airlines (10/9/2014).

[1876] Id. See also In re UAL Corp., Case No. 02-B-48191. "Order Authorizing the Debtors to Enter Into a Jet Fuel Supply Agreement With Morgan Stanley Capital Group Inc. Pursuant to 11 U.S.C. §§363 and 365 and Fed. R. Bankr. P. 6004 and 6006," (Bankr. E.D. Ill. 2003).

[1877] See 9/2003 "Jet Fuel Supply Agreement between Morgan Stanley Capital Group Inc. and United Air Lines, Inc. and United Aviation Fuels Corporation," (hereinafter, "2003 United-Morgan Stanley Supply Contract"), at 20, ¶ 10.1, PSI-UnitedAirlines-01-000003 - 044, at 022.

[1878] Subcommittee briefing by United Airlines (10/9/2014); 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122 ("Under the agreement MSGC owns and manages the inventories required to support deliveries to UAL and has been assigned from them, the storage and transportation agreements needed to support this business.").

[1879] Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).

[1880] Subcommittee briefing by United Airlines (10/9/2014); 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley. FRB-PSI-619109 - 129, at 122 ("Deliveries are via in tank stock transfers and are settled on a prepay basis, one business day prior to delivery.").

[1881] Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).

[1882] Subcommittee briefing by United Airlines (10/9/2014); see also 2003 United-Morgan Stanley Supply Contract, at 18, ¶ 5.6, PSI-UnitedAirlines-01-000003 – 044, at 020.

[1883] 2003 United-Morgan Stanley Supply Contract, ¶ 2.8, PSI-UnitedAirlines-01-000003 – 044, at 016.

[1884] Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014). See also 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122 (describing the supply agreement as "intended to cover the majority of United's demand for fuel at airport locations in the United States").

down as needed, while charging United a financing fee for holding the fuel.[1885] At other airports, United explained that it helped negotiate supply arrangements with unrelated jet fuel suppliers, working with Morgan Stanley to ensure the lowest-cost arrangements.[1886] United said those other jet fuel providers included BP, Chevron, Exxon, Shell and Valero, among others.[1887] United also explained that, at the O'Hare Airport, United sometimes sold excess fuel to other airlines, generally once per week to a foreign airline on a spot basis, making a small profit from the sales, and Morgan Stanley continued that practice.[1888]

According to United, under another contract provision, any profits earned from physical jet fuel trading in connection with the supply contract were split evenly between United and Morgan Stanley, while any losses from that trading were allocated solely to Morgan Stanley.[1889]

According to Morgan Stanley and United, the supply contract was extended several times, resulting in Morgan Stanley's acting as United's primary jet fuel supplier for ten years, from 2003 to 2013.[1890] Overall, under the agreement, Morgan Stanley supplied United with between $1 billion and $3 billion of jet fuel per year.[1891]

To meet its contractual obligations, Morgan Stanley maintained an extensive jet fuel inventory at multiple locations.[1892] To protect against price changes in the value of that inventory and in its ability to meet United's needs on a cost effective basis, Morgan Stanley told the Subcommittee that it hedged its fuel holdings with short futures using similar oil products, such as home heating oil, the price of which tended to rise and fall in tandem with the price of jet fuel.[1893] In addition, Morgan Stanley charged United margin "on a daily basis, taking into account both the outstanding exposure for financial and physical trades as well as the profit sharing balance that may be owed" to the airline.[1894]

Morgan Stanley told the Subcommittee that one of the main benefits from the arrangement for United was that Morgan Stanley's stronger credit profile enabled it to buy fuel at less expensive prices than United, which in 2003, was still in bankruptcy proceedings.[1895]

[1885] Subcommittee briefing by United Airlines (10/9/2014).
[1886] Id.
[1887] Id.
[1888] Id.
[1889] Id.
[1890] Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014).
[1891] 10/24/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-24-000001 - 004, at 001-002, [sealed exhibit].
[1892] See prior chart and discussion of storage facilities. See also 12/3/2008 memorandum from Federal Reserve , "Commodities Overview Meeting Minutes," FRB-PSI-304806 - 807 (noting that Morgan Stanley provided United "with 50% of its jet fuel via Transmontaigne.").
[1893] Subcommittee briefing by Morgan Stanley, (2/4/2014); Oil: Money, Politics and Power in the 21st Century, Tom Bower ((Grand Central Publishing 2010), at 137.
[1894] 11/3/2009 "Morgan Stanley ISG Commodity Operations Summary for Physical Energy Products Support," prepared by Morgan Stanley, FRB-PSI-619109 - 129, at 122.
[1895] Subcommittee briefing by Morgan Stanley (2/4/2014). See also 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.

Morgan Stanley said that it sold the fuel to United at better prices than United paid previously.[1896]

Morgan Stanley told the Subcommittee that when the contract began ten years ago, it had to import most of the jet fuel from Europe and Asia, but that U.S. refineries later began producing more of the fuel, reducing its cost and price volatility.[1897] Morgan Stanley indicated that it purchased some of the jet fuel from the European refinery with which it had a crude oil supply contract, Ineos, as well as from a refinery in the United States.[1898] It noted that after United emerged from bankruptcy, it became less reliant on Morgan Stanley's credit support.[1899]

Exiting the Supply Contract. In 2010, United merged with Continental Airlines, and as part of that merger, Continental managers initiated a review of United's fuel operations.[1900] According to United, the new management team determined that Morgan Stanley's jet fuel services were costly due to various management and financing fees, and that its credit support was no longer needed to obtain better fuel prices. Ultimately, the team decided that United would be better off supplying its own jet fuel and managing its own jet fuel assets.[1901]

United told the Subcommittee that it began phasing out Morgan Stanley as its primary fuel supplier in 2011, and formally ended the contract in 2013.[1902] According to United, it now issues annual contracts on a location-by-location basis and accepts competitive bids from private companies to meet its jet fuel needs for the year.[1903] United explained that it generally selected more than one supplier at each location to prevent supply disruptions and encourage competitive prices.[1904] United told the Subcommittee that while Morgan Stanley no longer managed its fuel needs, Morgan Stanley continued to provide it with physical fuel. United indicated that, as of October 2014, Morgan Stanley was the fifth-largest supplier of jet fuel to United, providing roughly 6% of United's fuel purchases.[1905]

[1896] 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.
[1897] Subcommittee briefing by Morgan Stanley (2/4/2014).
[1898] Id.
[1899] Id.
[1900] Subcommittee briefing by United Airlines (10/9/2014).
[1901] Id.
[1902] Id.
[1903] Id.
[1904] Id.
[1905] Id.

(c) Hedging Jet Fuel Prices with Emirates

A second jet fuel relationship involves Morgan Stanley's role in working with Emirates, a state-owned airline in the United Arab Emirates (UAE), to manage the airline's jet fuel price risk.[1906]

Emirates operates a transportation hub in Dubai and conducts flights to multiple airports in the United States.[1907] In 2004, the airline's Chief Executive Officer and Chairman of the Board was Sheikh Ahmed bin Saeed Al Maktoum, uncle to the current ruler of Dubai, Sheikh Mohammed bin Rashid.[1908]

For at least a decade, fuel costs have been the airline's largest single expense.[1909] In 2005, its fuel bill exceeded AED 3 billion.[1910] In 2013, its jet fuel costs totaled nearly $8.35 billion, representing 39% of the airline's total operating costs.[1911] According to Emirates, it had engaged in a variety of hedging strategies over the years with a variety of counterparties to manage its price risk, including crude oil hedges with Morgan Stanley.[1912] The airline indicated that, prior to 2009, it often had "multiple hedges in place at any one time, covering multiple future periods."[1913]

Initiating the Hedging. According to both Morgan Stanley and the airline, they began participating in crude oil hedges to limit Emirates' jet fuel price risk in 2004.[1914] Morgan Stanley devised and Emirates agreed to participate in those hedges from 2004 to 2008.[1915] Morgan Stanley told the Subcommittee that the hedges were designed and executed by its commodities traders based in its London and New York offices.[1916] Morgan Stanley described

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[1906] The Morgan Stanley-Emirates airline relationship was discussed in a book released in 2014. See The Secret Club That Rules the World: Inside the Fraternity of Commodities Traders. Kate Kelly (Penguin Group 2014), at 79-81.

[1907] See, e.g., "Featured Destinations." Emirates airline website, http://www.emirates.com/us/english/destinations_offers/destinations/america/index.aspx.

[1908] See 2009 - 2010 Annual Report, Emirates Group, at 1, 10, http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2010.pdf.

[1909] See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001.

[1910] See 4/16/2005 report, "Independent auditors' report to the Government of Dubai," prepared for Emirates airlines by PricewaterhouseCoopers, PSI-Excerpt2005EmiratesAuditor'sReport-000001 – 027, at 014 (AED stands for United Arab Emirates Dirham).

[1911] See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 001. See also 2013 - 2014 Annual Report, Emirates Group, at 52. http://content.emirates.com/downloads/ek/pdfs/report/annual_report_2014.pdf (reported in UAE dirhams).

[1912] See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 002 - 003.

[1913] Id. at 001 - 004.

[1914] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002; 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 002 - 003.

[1915] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002; 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

[1916] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 002. See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004 ("The hedge products and pricing were devised by Morgan Stanley and presented to Emirates. Emirates

the hedges as including a "capped double-down swap,"[1917] while Emirates said it used "cap-swap double-down extendable hedges" as part of the hedging strategy.[1918]

The hedges were complex financial structures which included put and call options, contracts for differences, and other financial instruments.[1919] According to Morgan Stanley, the hedges were designed with the expectation that crude oil would trade within a specified price range,[1920] which varied from a range of about $7 to about $40, with the exact prices and price ranges varying from year to year.[1921] According to the airline, if crude oil prices stayed within the specified price range, the airline was paid by the counterparty, Morgan Stanley, the hedge was successful, and the airline saved money on its fuel costs.[1922] If oil prices traded below the specified range, the airline was required to pay Morgan Stanley.[1923]

Emirates told the Subcommittee that it made money from its fuel hedging strategy "in most years," including the three years preceding the fiscal year at issue, and that it saved a total of about $600 million over that three-year period,[1924] or an average of $200 million per year. In 2008, however, crude oil prices spiked, climbing as high as $147 per barrel in July and exceeding the $110 upper bound specified in the hedging agreement then in place between the airline and Morgan Stanley.[1925] Crude oil prices then plummeted over the next few months. By early 2009, oil prices were in the $40 range,[1926] below the lower bound specified in the hedge.[1927]

Incurring a $440 Million Loss. Emirates told the Subcommittee that, as a result of the oil price swings, it incurred substantial losses from the hedge, which gradually added up to hundreds of millions of dollars owed to Morgan Stanley.[1928] When those unexpected losses began to accumulate, Morgan Stanley could have but did not offer to renegotiate the terms of the hedging agreement. Instead, in November 2008, Morgan Stanley's Chief Executive Officer John Mack flew to Dubai with Georges Makhoul, then President of Morgan Stanley's Middle East and Africa group, and Marc Mourre, then Vice Chairman of Morgan Stanley's Global Commodities

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decided which of these products best matched its needs. and for what timeframe, and so it was ultimately responsible for implementing the hedge.").

[1917] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-15-000001 - 004, at 002.

[1918] 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

[1919] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee. PSI-MorganStanley-15-000001 - 004, at 002.

[1920] Id.

[1921] Id. See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

[1922] See 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 004.

[1923] Id.

[1924] 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005.

[1925] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

[1926] See "Spot Prices: Crude Oil in Dollars Per Barrel, Products in Dollars Per Gallon," U.S. Energy Information Administration (10/22/2014), http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm.

[1927] 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005 - 006.

[1928] Id.

group, to meet with the airline about its financial obligations under the hedge.[1929] The Morgan Stanley executives met with Sheikh Ahmed bin Saeed Al Maktoum, head of the airlines, and may have also met with his nephew, Sheikh Mohammed bin Rashid, ruler of Dubai.[1930] In January 2009, the Investment Company of Dubai provided a credit guarantee to Morgan Stanley representatives in support of the airline.[1931]

The airline settled the hedge by paying Morgan Stanley and other counterparties a total of $440 million.[1932] This hedging loss is recorded primarily in its financial statement for the 2008-2009 fiscal year as a $428 million loss, due to timing issues and accounting requirements.[1933] Emirates told the Subcommittee that it was the first time in which a loss had been recorded on its fuel-related hedges with Morgan Stanley.[1934] The airline described the loss as "unusual" and "large," and said that it "had a material impact on Emirates' annual profit for that financial year, but it did not threaten the long-term financial viability of the airline."[1935]

Ending Fuel-Related Hedging. Emirates told the Subcommittee that after incurring the $440 million loss, it changed its policy and stopped entering into hedges related to jet fuel prices.[1936] The airline wrote: "Emirates is no longer hedging its fuel costs and so it is not trading with Morgan Stanley on the fuel side."[1937] The airline has maintained this policy since 2009.

Supplying Physical Jet Fuel. Although Emirates ended its fuel hedging relationship with Morgan Stanley, the relationship between the two has continued in other capacities. For example, since 2010, after winning a public competitive bidding process, Morgan Stanley has supplied Emirates with physical jet fuel at several U.S. airports, including three during 2014.[1938] Morgan Stanley indicated that, since 2010, it has provided about 42 million gallons of jet fuel per

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[1929] Subcommittee briefings by United Airlines (10/9/2014) and Morgan Stanley (2/4/2014); 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

[1930] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003 ("A meeting took place in November 2008 between Sheikh Ahmed bin Saeed Al Maktoum, Jahn Mack, George Makhoul, and Marc Mourre."); 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 006 (indicating that the client "understands that such a meeting may have taken place"). See also The Secret Club That Rules the World: Inside the Fraternity of Commodities Traders, Kate Kelly (Penguin Group 2014), at 81 (stating that the meeting included Sheikh Mohammed bin Rashid).

[1931] 9/29/2014 letter from Morgan Stanley legal counsel to Subcommittee, PSI-MorganStanley-15-000001 - 004, at 003.

[1932] Id. at 004; See also 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005.

[1933] 10/14/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-02-000001 - 007, at 005. The fiscal year for the Emirates airline was from April 1, 2008 to March 31, 2009.

[1934] Id.

[1935] Id.

[1936] Id. at 001, 006.

[1937] Id. at 001 - 007.

[1938] Id.; 10/9/2014 letter from Emirates airline legal counsel to Subcommittee, PSI-Emirates-01-000001 - 004, at 002 (stating Morgan Stanley supplies physical jet fuel to the Emirates airline at airports in Los Angeles, San Francisco, and Washington D.C.).

year to Emirates, delivering the fuel directly to the airports.[1939] The airline also uses other jet fuel suppliers in the United States.[1940]

(3) Issues Raised by Morgan Stanley's Involvement with Jet Fuel

Morgan Stanley has told the Federal Reserve that its physical jet fuel activities benefit the airlines and demonstrate why financial holding companies should be permitted to engage in physical commodity activities.[1941] The activities involving United Airlines and Emirates, however, provide anecdotal evidence of instances in which Morgan Stanley's fuel supply and hedging activities lost, rather than saved, the airlines money.

(a) Thin Benefits

Morgan Stanley has attempted to portray itself as an ally of airlines seeking access to jet fuel and protection from jet fuel price risks. Citing its dealings with United, Morgan Stanley has asserted that its ability to purchase, store, and transport physical jet fuel saved United a significant amount of overhead expenses and the need to obtain expensive financing.[1942] Morgan Stanley also claimed that its stronger credit profile enabled it to buy jet fuel at lower prices and pass those savings onto the airline.[1943]

In reality, those benefits appear to have been limited to the period during which United was experiencing financial distress. Morgan Stanley's jet fuel supply activities assisted the airline while the parent corporation was going through bankruptcy proceedings. Once the airline emerged from bankruptcy and regained its financial footing, it decided that Morgan Stanley's fuel assistance, with its fees and financing charges, was actually more expensive than if the airline were to procure its own fuel directly. It began to phase out Morgan Stanley's role in 2011, and ended it in 2013. United's action indicates that Morgan Stanley was no longer saving the airline money on its fuel operations.

The results of the jet fuel hedging provided by Morgan Stanley to Emirates were also mixed. The complex hedging structures that Morgan Stanley provided to the airline over a four-year period, from 2004 to 2008, saved the airline money, but cost it significant losses in 2009. The hedges appeared to reduce the airline's fuel expenses by about $200 million per year between 2005 and 2008, but then cost the airline $440 million in the next year – an unanticipated, material loss. In response, in 2009, Emirates decided to stop hedging its fuel prices altogether, a policy it has maintained for five years.

The market response to Morgan Stanley's jet fuel activities is clear: one airline terminated its fuel supply contract; the other terminated its hedging relationship. Those results detract from the strength of Morgan Stanley's claims that its physical jet fuel activities provide

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[1939] Id.
[1940] Id.
[1941] See 2014 Morgan Stanley Public Comment Letter, at 6, http://www.federalreserve.gov/SECRS/2014/April/20140421/R-1479/R-1479_041814_124930_510776321432_1.pdf.
[1942] Id.
[1943] Id.

significant commercial and financial benefits that should be continued. The facts also suggest that the benefits provided by Morgan Stanley were neither unique nor long-lasting. Other market participants now compete for the annual fuel supply contracts issued by United Airlines. Still others offer hedging strategies to Emirates. While Morgan Stanley now provides jet fuel to both United Airlines and Emirates, plenty of other fuel providers are doing the same.

(b) Operational and Catastrophic Event Risks

Morgan Stanley's jet fuel activities also continue to carry environmental and catastrophic event risks. Storing and transporting jet fuel is risky. Fires, explosions, and leaks present threats that traditional banks and bank holding companies do not confront. Volatile fuel prices also continually threaten to disrupt the economics of jet fuel supply operations; the 20% drop in crude oil prices in one month, from September to October 2014, illustrate the price risk. Still another risk is the small size of the jet fuel market whose limited participants make preventing or recovering from a financial loss especially difficult.

(4) Analysis

Morgan Stanley is not the only financial holding company to have engaged in physical jet fuel activities. Goldman has supplied jet fuel to Delta Airlines;[1944] and JPMorgan acquired substantial jet fuel inventories when it purchased RBS Sempra in 2010,[1945] and held jet fuel inventory at 28 locations across the United States, Asia, and Europe in 2013.[1946] Both financial holding companies are incurring the same kinds of risks as Morgan Stanley. Those financial, environmental, and catastrophic event risks make physical jet fuel activities inappropriate for banks and bank holding companies. It is past time for the Federal Reserve to enforce needed safeguards on this high risk physical commodity activity.

[1944] See, e.g., 10/28/2011 Goldman presentation to the Goldman Board of Directors, "Global Commodities Physicals Activities," FRB-PSI-700011 – 022, at 019 ("We are contracted to supply jet fuel to Delta Airlines on a just-in-time basis, reducing the need for them to maintain a large inventory[.]").

[1945] 5/26/2010 letter from JPMorgan to the Federal Reserve Bank of New York, FRB-PSI-301884 - 886 (listing the acquisition of jet fuel inventories from RBS Sempra) and FRB-PSI-302308 -322, at 311 - 312.

[1946] 9/13/2013 JPMorgan response to Subcommittee questionnaire, JPM-COMM-PSI-000001 - 019, at 003-004.

VI. JPMORGAN CHASE

JPMorgan Chase & Co. (JPMorgan), one of the largest financial institutions in the United States, conducted among the largest physical commodity activities of any U.S. financial holding company until its recent decision to exit the area. Prior to 2014, JPMorgan conducted activities involving crude oil, natural gas, coal, industrial metals, metals storage facilities, and electrical power generation. At the same time, it was the largest commodities trader of any U.S. financial institution. This case study focuses on JPMorgan's acquisition of multiple electrical power plants, including one that led to a $410 million penalty for manipulating electricity prices; its extensive copper activities, which operate outside of normal size limits and include a proposal for a copper-backed exchange traded fund which has raised conflict of interest and market manipulation concerns among industrial copper users; and its actions to circumvent prudential limits on the size of its physical commodity activities.

A. JPMorgan Overview

JPMorgan Chase & Co. is a global financial services firm incorporated under Delaware law and headquartered in New York City.[1947] It is listed on the New York Stock Exchange (NYSE) under the ticker symbol "JPM."[1948] In addition to being the largest financial holding company in the United States, JPMorgan conducts operations in more than 60 countries with over 260,000 employees.[1949] As of December 31, 2013, it had a market capitalization of $211 billion and consolidated assets totaling more than $2.4 trillion.[1950] In 2013, JPMorgan reported net revenues nearing $97 billion and net income of almost $18 billion.[1951]

JPMorgan Leadership. The Chairman of the Board and Chief Executive Officer of JPMorgan Chase & Co. is Jamie Dimon, who has held those posts since 2006.[1952] The Chief Operating Officer is Matthew Zames, and the Chief Financial Officer is Marianne Lake.[1953] The head of the Global Commodities Group, from 2006 to 2014, was Blythe Masters.[1954] She was recently replaced by two co-heads of the group, John Anderson and Mike Camacho.[1955] John

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[1947] 7/1/2014 JPMorgan Chase & Co. Resolution Plan Public Filing (hereinafter "2014 JPMorgan Resolution Plan"), at 4, http://www.federalreserve.gov/bankinforeg/resolution-plans/jpmorgan-chase-1g-20140701.pdf; "Holding Companies with Assets Greater Than $10 Billion," (as of 6/30/2014), National Information Center (using Federal Reserve data), http://www.ffiec.gov/nicpubweb/nicweb/Top50Form.aspx.
[1948] Undated "About Us," JPMorgan website, http://www.jpmorganchase.com/corporate/About-JPMC/about-us.htm.
[1949] Id.
[1950] 2014 JPMorgan Resolution Plan, at 4.
[1951] 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 62, http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm.
[1952] 2014 JPMorgan Resolution Plan, at 30; undated "Members of the Board," JPMorgan website, http://www.jpmorganchase.com/corporate/About-JPMC/board-of-directors.htm.
[1953] 2014 JPMorgan Resolution Plan, at 30.
[1954] See 4/2011 "Global Commodities - Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 125 (listing Global Commodities Group executives). See also "The Legacy of JPMorgan's Blythe Masters," Bloomberg Businessweek, Sheelah Kolhatkar (4/3/2014), http://www.businessweek.com/articles/2014-04-03/the-legacy-of-jpmorgans-blythe-masters.
[1955] 9/19/2014 letter from JPMorgan legal counsel to the Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorgan-12-000001 - 003, at 001.

Anderson is also the Chief Executive Officer of J.P. Morgan Ventures Energy Corporation.[1956] Until he retired in 2013, Francis Dunleavy was the head of Principal Investing within the Commodities Group.[1957]

(1) Background

The modern JPMorgan is the product of a merger between J.P. Morgan & Co. and The Chase Manhattan Corp. in 2000.[1958] Both J.P. Morgan & Co. and the Chase Manhattan Corp. were themselves the culmination of multiple bank mergers and acquisitions over time. J.P. Morgan & Co. was originally Drexel, Morgan & Co., founded by John Piermont Morgan and Anthony Drexel in New York in 1871, as a merchant banking partnership.[1959] After the Glass-Steagall Act required the separation of banks and securities firms in 1933, the company chose to continue operating as a commercial bank.[1960] The Chase Manhattan Corp. was a product of The Bank of The Manhattan Co., which was founded in 1799, by former U.S. Senator and future U.S. Vice President Aaron Burr.[1961] Over time, The Bank of The Manhattan Co. merged with a number of other banks, including the Chemical Banking Corp. in 1996.[1962] After the merger that produced JPMorgan Chase & Co. in 2000, additional acquisitions followed, including Bank One Corp., a major Midwestern bank in 2004. During the financial crisis, JPMorgan also acquired, in 2008, the Bear Stearns Companies Inc.[1963]

Financial Holding Company Status. On March 13, 2000, pursuant to the Gramm-Leach-Bliley Act, JPMorgan Chase & Co. elected to become a financial holding company.[1964] The holding company owns several banks. Its principal U.S. bank subsidy is JPMorgan Chase Bank, N.A., a large national bank with branches in 23 states.[1965] Another key U.S. bank subsidiary is Chase Bank USA, N.A., which is JPMorgan's credit card-issuing bank.[1966]

[1956] 6/5/2014 letter from JPMorgan legal counsel to the Subcommittee, "JPMorgan Chase & Co's April 23, 1024 Briefing Follow-Up," PSI-JPMC-11-000001 - 002, at 001.

[1957] See 4/2011 "Global Commodities – Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 125 (listing Global Commodities Group executives). See also "JPMorgan energy exec at center of power-market flap retires," Reuters, (11/7/2013), http://www.reuters.com/article/2013/11/07/us-jpmorgan-commodity-dunleavy-idUSBRE9A616H20131107.

[1958] "The History of JPMorgan Chase & Co.," JPMorgan website, at 19 (hereinafter, "History of JPMorgan Chase & Co."), http://www.jpmorganchase.com/corporate/About-JPMC/document/shorthistory.pdf.

[1959] Id. at 5.

[1960] Id. at 12.

[1961] Id. at 2.

[1962] Id. at 19.

[1963] Id.

[1964] See "Institution History for JPMorgan Chase & Co.," National Information Center (using Federal Reserve data), http://www.ffiec.gov/nicpubweb/nicweb/InstitutionHistory.aspx?parID_RSSD=1039502&parDT_END=99991231 (showing it was actually The Chase Manhattan Corporation that elected to become a financial holding company on March 13, 2000; following its merger later that year with JPMorgan, the financial holding company changed its name to J.P. Morgan Chase & Co.).

[1965] See 2014 JPMorgan Resolution Plan, at 5, http://www.federalreserve.gov/bankinforeg/resolution-plans/jpmorgan-chase-1g-20140701.pdf; 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 1, http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm.

[1966] 2014 JPMorgan Resolution Plan, at 6; 2013 JPMorgan Chase & Co. Annual Report, filed with SEC on 2/20/2014, at 1, http://www.sec.gov/Archives/edgar/data/19617/000001961714000289/corp10k2013.htm.

Key Subsidiaries. Two key nonbank U.S. subsidiaries are J.P. Morgan Securities LLC, its primary registered U.S. broker-dealer, investment advisor, and futures commission merchant; and J.P. Morgan Ventures Energy Corporation, which conducts commodities derivatives transactions as well as physical commodities transactions.[1967] A key U.K. subsidiary is J.P. Morgan Securities PLC (formerly J.P. Morgan Securities Ltd.) which, among other activities, deals in commodity derivatives.[1968]

Major Business Lines. In its 2014 Resolution Plan, JPMorgan identified five major business segments. The first is its Corporate and Investment Bank, which provides services related to fixed income, equities, commodities, and global investment banking, among other areas.[1969] The second business segment is Commercial Banking, which provides financing, investment banking, and asset management services to large clients, including corporations, municipalities, and financial institutions.[1970] The third is Asset Management, which provides institutional, high-net-worth, and retail investors with global investment services, and currently manages client assets totaling $2.3 trillion.[1971] The fourth is Corporate/Private Equity, a segment that includes JPMorgan's treasury functions, Chief Investment Office, and other major corporate units for the holding company and bank.[1972] The last is Consumer and Community Banking, which includes JPMorgan's retail banking, credit card, mortgage, and lending services.[1973]

Commodities Activities. The Corporate and Investment Bank includes the Global Commodities Group (GCG), which is JPMorgan's leading commodities-related business unit.[1974] In 2012, the Group had over 600 employees.[1975] GCG is organized around four categories of physical commodities: metals, energy, agricultural, and environmental.[1976] GCG personnel conduct financial trades involving those commodities using a variety of financial instruments, including swaps, forwards, futures, and options. They also provide clients with commodities-related risk management services, market intelligence, financing, structuring, market-making, and other services.[1977]

GCG personnel also conducted the bulk of JPMorgan's physical commodity activities. Those activities included, at times, the purchase, sale, transport, and storage of various

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[1967] 2014 JPMorgan Resolution Plan, at 5.
[1968] 9/19/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorgan-12-000001 - 003, at 002; 2014 JPMorgan Resolution Plan, at 5-6.
[1969] 2014 JPMorgan Resolution Plan, at 7-8.
[1970] Id. at 7, 9.
[1971] Id. at 7, 9-10.
[1972] Id. at 7, 10.
[1973] Id. at 7-8.
[1974] 11/4/2009 "JPM Energy Ventures Energy Corporation [:] Control Validation Target Exam," prepared by Federal Reserve, FRB-PSI-200611 - 632, at 613 [sealed exhibit]; undated "Commodities," JPMorgan website. https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities.
[1975] 1/2012 "JP Morgan Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 546. The number of employees has since decreased. See, e.g., 9/2013 "Self Assessment," prepared by JPMorgan, FRB-PSI-301370 - 378, at 374.
[1976] See undated "Commodities," JPMorgan website, https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities.
[1977] See undated "J.P. Morgan Global Commodities Group – Client Solutions Provider," prepared by JPMorgan, FRB-PSI-200822 - 826, at 822; 2014 JPMorgan Resolution Plan, at 9.

commodities, including oil products, natural gas products, coal, metals, electricity, and agricultural products.[1978] In addition, GCG provides clients with a range of physical commodity services, including risk management solutions, commodity-linked financing, physical hedging solutions, off-take and supply agreements, and transportation and storage of assets.[1979] In 2014, JPMorgan reported that the GCG had over 2,200 active clients.[1980]

The key legal entity executing activities on behalf of the Global Commodities Group is J.P. Morgan Ventures Energy Corporation (JPMVEC).[1981] JPMVEC was formed in 2005, as a Delaware corporation. It has no U.S. or European employees or offices of its own, and instead acts through GCG employees.[1982] JPMVEC is the key legal entity that actually executes the bulk of JPMorgan's financial and physical commodities trading as well as other commodities-related activities, either directly or through subsidiaries or affiliates.[1983]

One example of the physical commodity activities undertaken by JPMorgan is what the bank has referred to as "Project Liberty."[1984] In 2012, using its complementary authority, JPMVEC entered into a long term oil supply agreement with Philadelphia Energy Solutions Refining and Marketing (PESRM), a joint venture between the Carlyle Group and Sunoco to operate one of the largest oil refineries in the United States.[1985] According to JPMorgan, under a five-year contract, JPMVEC agreed to supply "100% of the crude oil and feedstocks" required by the refinery and to purchase "the majority of the refined products" as they were produced.[1986] JMPVEC then sold "around half of the refinery products back to Sunoco for its retail distribution

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[1978] 2014 JPMorgan Resolution Plan, at 9.

[1979] 4/2011 "Our Commodities Franchise and Our Competitive Advantages," prepared by J.P.Morgan, FRB-PSI-623086 - 127, at 089.

[1980] 2014 JPMorgan Resolution Plan, at 9. This figure is down nearly one-third from the 3,000 clients JPMorgan reported in 2011. See 4/2011 "Our Commodities Franchise and Our Competitive Advantages," prepared by J.P.Morgan. FRB-PSI-623086 - 127, at 089.

[1981] See, e.g., 9/16/2005 letter from JPMorgan's legal counsel to the Federal Reserve Bank, "Notice Pursuant to Section 4(k)(1)(B)." PSI-FederalReserve-01-000481 - 536 (discussing JPMVEC's activities).

[1982] Subcommittee briefing by JPMorgan (4/23/2014).

[1983] Id. See also, e.g., 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve, "Notice Pursuant to Section 4(k)(1)(B)," PSI-FederalReserve-01-000481 - 536, at 486 (discussing JPMVEC's activities); 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan, PSI-FederalReserve-02-000012 - 033, at 014 ("JPMVEC currently engages as principal in commodity derivatives transactions and offers a full range of derivatives to its clients across the spectrum of crude oil, coal, electricity and natural gas-related risks. In addition, JPMVEC enters into physical transactions in the natural gas, crude oil, coal and electricity markets and makes and takes delivery of these commodities.").

[1984] See 1/24/2013 "Commodities Physical Operating Risk," prepared by JPMorgan, FRB-PSI-301379 - 382, at 381 (chart entitled, "Physical Operating Risk Review of Project Liberty") (hereinafter, "2013 Project Liberty Chart"); 10/6/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009.

[1985] 10/6/2014 letter from JPMorgan legal counsel to Subcommittee, "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009, at 001, 006. JPMorgan undertook this activity after obtaining permission from the Federal Reserve to use a "third party to alter or refine commodities" on its behalf. See 11/25/2008 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co.," prepared by JPMorgan, PSI-FederalReserve-01-000553 - 558 (requesting that authority); 4/20/2009 letter from Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 (granting JPMorgan's request).

[1986] 2013 Project Liberty Chart, FRB-PSI-301379 - 382, at 381.

network" and sold the rest to third parties.[1987] To implement the agreement, JPMVEC leased or subleased about 14.5 million barrels of storage for crude and refined products on and around the refinery premises.[1988] The crude oil and feedstocks provided by JPMVEC "arrive[d] via ship and rail."[1989] This project illustrates JPMorgan's intimate involvement with buying, transporting, storing, and selling key physical commodities.[1990]

Commodities-Related Merchant Banking. In addition to GCG, JPMorgan has engaged in commodity-related activities through certain investment funds and merchant banking activities undertaken in other areas of the bank. For example, JPMorgan Infrastructure Investments Group, located within the Global Real Assets section of the Asset Management business segment, oversees investment funds focused on infrastructure projects.[1991] The Group, through JPMorgan Investment Management, Inc., has 35 investment professionals who advise and help manage the JPMorgan Infrastructure Investments Fund.[1992] The Fund, which was established in 2006, and whose general partner is JPMorgan IIF Acquisitions LLC, has raised $3 billion for investments in power plants, oil and gas pipelines, and electricity distribution assets, among other projects.[1993] The Fund operates with capital raised from third party investors; according to JPMorgan, it has not contributed any of its own money to the Fund.[1994] Additional commodity-related projects have been funded by J.P. Morgan Partners LLC, formerly known as JPMorgan Capital Partners, a "private equity division of JPMorgan & Co." that raises capital from third party investors.[1995]

In June 2014, JPMorgan reported to the Federal Reserve that it held merchant banking investments with a total value of about $10 billion, but it is unclear how many of those were commodity related and whether the total included any projects administered by the Infrastructure Investments or J.P. Morgan Partners funds.[1996]

[1987] Id.; 10/6/2014 letter from JPMorgan's legal counsel to the Subcommittee. "JPMorgan Chase & Co's Responses to Follow-Up Questions," PSI-JPMorganChase-14-000001 - 009, at 002.
[1988] Id.
[1989] 2013 Project Liberty Chart, prepared by JPMorgan, FRB-PSI-301379 - 382, at 381.
[1990] In October 2014, JPMorgan sold Project Liberty to Bank of America. Subcommittee briefing by JPMorgan (10/10/2014).
[1991] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004. For more information about JPMorgan's Global Real Assets section, see 12/3/2012 "Virginia Port Partners Proposal for Port of Virginia PPTA," prepared by J.P. Morgan Asset Management for Virginia's Office of Transportation Public-Private Partnerships, at 4. http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.
[1992] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003 - 004; 12/3/2012 letter from JPMorgan IIF Acquisitions LLC and Maher Terminals LLC to Virginia Office of Transportation Public-Private Partnerships, at 1, and 12/3/2012 "Virginia Port Partners Proposal for Port of Virginia PPTA," at 3 - 4. http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.
[1993] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 004; 12/3/2012 letter from JPMorgan IIF Acquisitions LLC and Maher Terminals LLC to Virginia Office of Transportation Public-Private Partnerships, at 1, and 12/3/2012 proposal at 4, http://www.vappta.org/resources/RREEF%20and%20JPMorgan_Detailed%20Proposal.pdf.
[1994] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 004.
[1995] "J.P. Morgan Partners," JPMorgan website, https://www.jpmorgan.com/pages/jpmorganpartners. In addition, some J.P. Morgan Partners professionals formed CCMP Capital Advisors, LLC and Panorama Capital, LLC which "manage the JPMP investments pursuant to a management agreement entered into with JPMorgan Chase & Co." Id.
[1996] See 6/30/2014 "Consolidated Holding Company Report of Equity Investments in Nonfinancial Companies - FR Y-12," filed by JPMorgan with the Federal Reserve, FRB-PSI-800005 - 008, at 006.

Commodities Trading. At the same time it conducts a wide range of physical commodity activities, JPMorgan trades commodities-related financial instruments, including futures, swaps, and options, involving billions of dollars each day. JPMorgan is the largest financial institution in the United States trading financial commodity instruments, according to Coalition Development Ltd., a company that collects commodity trading statistics.[1997] OCC data indicates it is also among the largest financial institution trading commodity-related derivatives.[1998]

Commodity Revenues. According to JPMorgan, at the end of 2013, it had commodity-related contracts, including swaps, futures, options, and forwards, with a total dollar value of $763 billion, down from a 2012 year-end total of $1 trillion.[1999] Separately, JPMorgan reported that, in 2013, its physical commodities activities had a total dollar value of about $10.2 billion, down from $16.2 billion the year before.[2000]

(2) Historical Overview of Commodities Activities

According to JPMorgan Chase & Co., in a short history of the bank, the company was "built on the foundation of more than 1,000 predecessor institutions."[2001] They include such well-known banks as J.P. Morgan & Co., The Chase Manhattan Bank, Bank One, Manufacturers Hanover Trust Co., Chemical Bank, The First National Bank of Chicago, and National Bank of Detroit.[2002]

At times, JPMorgan's predecessor banks were involved with securities or commodity activities that led to the bank's being subjected to Congressional scrutiny. As explained earlier, the 1912 Pujo money trust hearings held by the U.S. House of Representatives focused, in part, on actions taken by J. Pierpont Morgan and J.P. Morgan and Co. to form "trusts" that acted as holding companies for massive commercial enterprises, including businesses that handled physical commodities, such as railroads, oil companies, steel manufacturers, and shipping and mining ventures.[2003] After the 1929 stock market crash, the Pecora hearings in the U.S. Senate

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[1997] See 9/2014 "Global & Regional Investment Bank League Tables-1H2014," prepared by Coalition Development Ltd., PSI-Coalition-01-00019 - 025, at 020.

[1998] 2013 "OCC's Quarterly Report on Bank Trading and Derivatives Activity Fourth Quarter 2013," prepared by OCC, at Tables 1 and 2, http://www.occ.gov/topics/capital-markets/financial-markets/trading/derivatives/dq413.pdf.

[1999] 2014 JPMorgan Resolution Plan, at 23, http://www.federalreserve.gov/bankinforeg/resolution-plans/jpmorgan-chase-1g-20140701.pdf.

[2000] See 12/31/2012 "Consolidated Financial Statements for Bank Holding Companies—FR Y-9C, Schedule HC-D, Item M.9.a.(2), http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20121231.PDF. See also12/31/2013 "JPMorgan FR Y-9C Consolidated Financial Statements for Bank Holding Companies—FR Y-9C," Schedule HC-D. Item M.9.a.(2), http://www.ffiec.gov/nicpubweb/NICDataCache/FRY9C/FRY9C_1039502_20131231.PDF.

[2001] Undated "The History of JPMorgan Chase & Co.," JPMorgan website, at 1, http://www.jpmorganchase.com/corporate/About-JPMC/document/shorthistory.pdf.

[2002] Id.

[2003] See "Money Trust Investigation: Financial and Monetary Conditions in the United States," hearing before a subcommittee of the House Committee on Banking and Currency, HRG-1912-BCU-0017 (5/16/1912), Y4.B22/1:M74/2-1, http://congressional.proquest.com/congressional/docview/t29.d30.hrg-1912-bcu-0017?accountid=45340 (first of multiple days of hearings continuing into 1913); The House of Morgan, Ron Chernow (Grove Press 1990), at 67-68 (railroad trusts), 81-86 (U.S. Steel trust), 100-103 (shipping trust), and 123 (copper trust), 150-156 (Pujo hearings).

took testimony from J. P. ("Jack") Morgan and highlighted actions taken by J. P. Morgan & Co. in the underwriting and trading of questionable securities, including securities related to utility companies, and providing new stocks at below market prices to government officials.[2004] In 1935, in response to the Glass-Steagall Act's mandating the separation of banks and securities firms, J.P. Morgan & Co. decided to remain a bank and spun off its securities activities to a newly formed company, Morgan Stanley, discussed above.[2005]

JPMorgan Chase Bank. Fifty years later, JPMorgan Chase Bank, began to conduct financial and, later, physical commodity trades. The bank's involvement with commodities followed actions taken by the OCC during the 1980s, permitting national banks to engage in an increasingly large array of commodity activities. As discussed earlier, the first step was in 1982, when the OCC explicitly authorized national banks to execute and clear trades in futures contracts.[2006] A JPMorgan bank affiliate, J.P. Morgan Futures, Inc., registered as a futures commission merchant that same year.[2007] In 1986, the OCC authorized national banks to trade commodity-related futures for themselves and on behalf of clients, act as broker-dealers and market makers for exchange traded options, and provide margin financing to clients trading commodities.[2008] Also in 1986, Chase Manhattan Bank – another JPMorgan predecessor bank – entered into reportedly the first oil-related swap with Koch Industries, introducing the concept of swaps linked to the price of physical commodities.[2009] In 1987, the OCC authorized national banks to engage in transactions involving commodity price index swaps.[2010]

The OCC continued to broaden bank authority to engage in commodity activities during the 1990s. In 1993, the OCC authorized national banks to hedge permissible banking activities by making or taking physical delivery of commodities, and to engage in related physical

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[2004] See, e.g., "Stock Exchange Practices." report of the U.S. Senate Committee on Banking and Currency, S.Hrg. 73-1455, (6/6/1934). https://www.senate.gov/artandhistory/history/common/investigations/pdf/Pecora_FinalReport.pdf, and associated hearings from January 1933 to May 1934 (known as the Pecora hearings); The House of Morgan, Ron Chernow (Grove Press 1990), at 352-373.

[2005] See, e.g., The House of Morgan, Ron Chernow (Grove Press 1990), at 385.

[2006] Undated OCC Interpretive Letter (7/23/1982), unpublished, PSI-OCC-01-000011 - 012.

[2007] See JP Morgan Futures Inc. FCM information, NFA BASIC website, http://www.nfa.futures.org/basicnet/Details.aspx?entityid=jSzQxZANWxY%3d&rn=Y. That FCM license was withdrawn in 2011. Id. In addition, JP Morgan Securities LLC currently holds an FCM license that Bear Stearns obtained in 1982. See JP Morgan Securities LLC FCM information, NFA BASIC website, http://www.nfa.futures.org/BasicNet/Details.aspx?entityid=7YD6PX%2bm0vo%3d.

[2008] See, e.g., OCC Interpretive Letter No. 356 (1/7/1986), PSI-OCC-01-000026 - 028 (authorizing a bank subsidiary to trade agricultural and metal futures for clients seeking to hedge bank loans); OCC Interpretive Letter No. 372 (11/7/1986) PSI-OCC-01-000043 - 044 (authorizing a bank subsidiary to act as a broker-dealer and market maker for exchange-traded options for itself, its affiliated bank, and clients); OCC Interpretive Letter No. 380 (12/29/1986) PSI-OCC-01-000046-061, at 047 - 048, 060. reprinted in Banking L. Rep. CCH ¶ 85,604 (authorizing a bank to provide margin financing to its clients to trade commodities; and to execute and clear client transactions involving futures and options on exchanges and over the counter).

[2009] See 7/2009 "Oil Derivatives: In the Beginning," EnergyRisk magazine (July 2009), at 31, http://db.riskwaters.com/data/energyrisk/EnergyRisk/Energyrisk_0709/markets.pdf. The swap was a bilateral contract in which, for a four-month period, one party agreed to make payments to the other for 25,000 barrels of oil per month using a fixed price per barrel, while the other party agreed to make payments using the average monthly spot price for oil.

[2010] See OCC No-Objection Letter No. 87-5 (7/20/1987), PSI-OCC-01-000100-106, at 106. This letter was requested by Chase Manhattan Bank, a predecessor to JPMorgan.

commodity activities such as "storing, transporting, and disposing of the commodities."[2011] In 1995, the OCC gave banks broad authority to engage in physically-settled transactions involving metals, as well as "ancillary activities" such as storing, transporting, and disposing of them.[2012]

JPMorgan Chase Bank took advantage of each of the OCC grants of authority to expand the bank's commodities activities.[2013] In addition to trading commodity futures, forwards, and options, the bank also conducted derivatives transactions, including derivatives related to commodities. It was later discovered that, from 1992 to 2001, JPMorgan Chase Bank entered into twelve energy trades with Enron involving $3.7 billion, in transactions later exposed as hidden loans that disguised the extent of Enron's indebtedness.[2014] JPMorgan Chase Bank eventually became the largest swaps dealer in the United States.

JPMorgan Holding Company. In 1999, when the Gramm-Leach-Bliley Act expanded permissible activities for bank holding companies, JPMorgan took advantage of the changes in the law and, in 2000, elected to become a financial holding company under the Act.[2015] Over time, the holding company also became involved with commodities.

In 2003, due in part to the growing role of banks in commodities under OCC supervision, the Federal Reserve began to relax its rules regarding commodity activities by financial holding companies. One of the Federal Reserve's earlier steps was to give bank holding companies more leeway to participate in physically settled transactions, allowing them to take or make delivery of documents giving title to physical commodities on an "instantaneous pass-through basis," for commodities approved by the CFTC for trading on an exchange.[2016] Also in 2003, the Federal Reserve began granting requests by financial holding companies to engage in complementary commodity activities under the Gramm-Leach-Bliley Act. JPMorgan applied for and received a complementary order in 2005.[2017]

In 2004, JPMorgan acquired Bank One Corporation, a major Midwestern bank. Prior to that purchase, both JPMorgan Chase & Co. and JPMorgan Chase Bank had the Federal Reserve

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[2011] OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366, at 365.

[2012] See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368-374, at 372 - 374; OCC Interpretive Letter No. 1073 (10/19/2006), PSI-OCC-01-000425 - 432, at 425 (allowing banks and their foreign branches to engage in "customer-driven, metal derivative transactions that settle in cash or by transitory title transfer"); OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (allowing banks to buy and sell physical copper).

[2013] See 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve Bank, "Notice Pursant to Seciton 4(k)(1)(B)." PSI-FederalReserve-01-000481 - 536 (describing OCC and New York Banking Department approvals and its physical commodity activities over the years).

[2014] See "The Role of the Financial Institutions in Enron's Collapse-Volume 1," Permanent Subcommittee on Investigations, S. Hrg. 107-618, (July 23 and 30, 2002), at 231, 264.

[2015] See "Institution History for JPMorgan Chase & Co.," National Information Center (using Federal Reserve data), http://www.ffiec.gov/nicpubweb/nicweb/InstitutionHistory.aspx?parID_RSSD=1039502&parDT_END=99991231.

[2016] See 68 Fed. Reg. 39,807, 39,808 (7/3/2003); 12 C.F.R. §225.28(b)(8)(ii)(B).

[2017] See 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028; 9/16/2005 letter from JPMorgan legal counsel to Federal Reserve, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000478 - 536. 11/18/2005 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JPMorgan Chase & Co., 92 Fed. Res. Bull. C57 (2006), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.

as their primary regulator. After the acquisition, JPMorgan Chase Bank was classified as a national bank, and its primary regulator became the OCC.[2018]

Bear Stearns Acquisition. The physical commodity profile of JPMorgan expanded dramatically four years later. In March 2008, in the midst of the financial crisis and essentially at the request of the Federal Reserve, JPMorgan acquired The Bear Stearns Companies Inc. (Bear Stearns), a large investment bank that was then nearly insolvent.[2019] At the time, Bear Stearns had extensive physical commodity holdings and was active in a number of physical spot markets.[2020] Bear Stearns was especially active in the energy markets and used its subsidiary, Bear Energy, to acquire ownership interests in dozens of power plants.[2021] Through its acquisition of Bear Stearns, JPMorgan gained control of a vast number of new physical commodity assets and activities.

UBS Acquisition. In 2009, JPMorgan further expanded its physical commodity activities when it acquired UBS Commodities Canada Ltd. and UBS AG's agricultural trading business.[2022] Those purchases gave JPMorgan an increased presence in the Canadian natural gas, power and crude oil physical and financial markets, and enlarged its agricultural commodity holdings.[2023]

Refining Authority. Also in 2009, JPMorgan requested, and the Federal Reserve approved, complementary authority for JPMorgan to "engage a third party to alter or refine commodities" on its behalf.[2024] JPMorgan later used this authority to sell crude oil to a refinery and buy back the refined products.[2025] It has also used the authority to hire third parties to blend heating oil, jet kerosene, and gasoline fuels to produce oil products that meet specific national, regional, or client standards.[2026]

RBS Sempra Acquisition. In 2010, JPMorgan again substantially increased its physical commodities profile when, in two separate transactions in July and October, for $1.6 billion, it acquired the ownership stake of the Royal Bank of Scotland (RBS) in RBS Sempra, a joint

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[2018] See "Institution Directory for JPMorgan Chase Bank, National Association," Federal Deposit Insurance Corporation website, https://www2.fdic.gov/idasp/confirmation_outside.asp?inCert1=628.
[2019] See undated Federal Reserve press release, "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.
[2020] See, e.g., 7/31/2008 "Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co." prepared by the Federal Reserve. FRB-PSI-305013-030 (identifying Bear Stearns assets being integrated into JPMorgan) [sealed exhibit].
[2021] See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 547; 7/17/2008 memorandum from the OCC to the File, "Quarterly review of risk, performance and significant developments" for JPMorgan. FRB-PSI-303773 - 818, at 779 - 780 [sealed exhibit](listing Bear Energy assets as of 2008, including tolling and load agreements, gas storage facilities, gas transport facilities, and power plants). See also "Bear Stearns's Trading Unit Draws Interest," Wall Street Journal, Ann Davis (4/5/2008), http://online.wsj.com/news/articles/SB120735754695191559?mod=googlenews_wsj&mg=reno64-wsj.
[2022] 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547.
[2023] Id.; "J.P. Morgan to Acquire UBS' Canadian Energy and Global Agricultural Businesses," prepared by JPMorgan, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aHoYAtnF5ydo.
[2024] See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002 [sealed exhibit].
[2025] See information on Project Liberty, above.
[2026] 9/10/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorganChase-06-000001 - 013, at 006.

venture between RBS and Sempra Energy, a U.S. energy company.[2027] The two acquisitions provided JPMorgan with extensive North American and European energy and commodity operations involving oil, natural gas, metals, coal, plastics, agricultural products, emissions, and electricity.[2028] JPMorgan's expanded physical commodity operations included more than 130 new storage and warehousing facilities in ten countries.[2029]

Henry Bath Acquisition. As part of the RBS Sempra acquisition, JPMorgan took ownership of Henry Bath & Sons, Ltd., which owned and managed a worldwide network of commodity storage warehouses licensed by the London Metal Exchange.[2030] The Henry Bath storage facilities facilitated the holding, making delivery, and taking delivery of physical commodities, primarily metals but also other commodities.[2031] Through its ownership of Henry Bath, JPMorgan gained warehousing operations in 19 port locations across the United States, Europe, Asia, and Middle East.[2032]

London Metal Exchange. JPMorgan extended its reach again by inheriting shares and buying an ownership stake in the London Metals Exchange (LME), the leading futures market in metals.[2033] JPMorgan became the LME's largest shareholder, holding an 11% ownership stake,[2034] until the LME was sold to a Hong Kong exchange in 2012, when JPMorgan sold all of its shares to the exchange.[2035] In 2013, JPMorgan was appointed a member of a key LME advisory group that deals directly with the LME Board.[2036] In addition, J.P. Morgan Securities

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[2027] JPMorgan Chase & Co., Form 10-K for the fiscal year ending December 31, 2011, at 184, http://sec.gov/Archives/edgar/data/19617/000001961712000163/corp10k2011.htm#s50873 1DA912EFDF440782294EA306391. See also 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547.

[2028] See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 - 592, at 547; 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Sempra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.

[2029] 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Sempra," https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.

[2030] See id.; undated, "Merchant Banking Investment in Henry Bath," FRB-PSI-000580 - 582. See also undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824 (listing the licensing authorities as the London Metal Exchange, the London International Financial Futures. Options Exchange, and Intercontinental Exchange).

[2031] See undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824.

[2032] See 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 552; undated "Introduction to JPM Commodities & Steel Hedging," prepared by JPMorgan, FRB-PSI-200822 - 826, at 824.

[2033] 2/13/2013 OCC email from OCC staff to OCC staff, "Commodities Quarterly Update," OCC-PSI-00000374.

[2034] 6/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMC-11-000001 - 002, at 001.

[2035] See, e.g., 12/6/2012 London Metal Exchange press release, "HKEx and LME announce completion of transaction," http://www.lme.com/en-gb/news-and-events/press-releases/press-releases/2012/12/hkex-and-lme-announce-completion-of-transaction/.

[2036] See, e.g., "LME Starts User Advisory Group After $2.2 Billion Takeover," Bloomberg, Agnieszka Troszkiewicz (1/8/2013), http://www.bloomberg.com/news/2013-01-08/lme-starts-user-advisory-group-after-2-2-billion-takeover-1-.html (indicating JPMorgan was one of 14 members of the advisory committee).

plc, a U.K. subsidiary, has remained a "Category 1 ring-dealing member" of the LME exchange, with special trading status on the LME floor.[2037]

In January 2012, in a presentation prepared by JPMorgan for its clients, it described its "growth" in commodities over the prior few years as "consistent and dramatic."[2038] It stated that its commodities personnel had acquired "deep expertise across all commodity types (600 employees in 20+ locations worldwide)" and an "[e]xpansive financial and physical platform."[2039] It stated that "J.P. Morgan's Global Commodities Group offer[ed] clients a comprehensive set of market making, structuring, risk management, financing and warehousing capabilities across the full spectrum of commodity asset classes."[2040]

(3) Current Status

When the Federal Reserve initiated its special review of financial holding company involvement with physical commodities in 2010, JPMorgan was one of the ten banks it examined in detail. JPMorgan was also featured in the October 2012 Summary Report issued by the Federal Reserve's Commodities Team summarizing the findings of the special review.[2041]

The 2012 Summary Report described JPMorgan's wide-ranging physical commodity activities. It stated that JPMorgan had a "significant global oil storage portfolio (25 [million barrel] capacity) … along with 19 Natural Gas storage facilities on lease with an average tenor of 2.8 years";[2042] "14 tolling agreements … of which one is for a power plant that generates 6% of the maximum total output in the California Electricity grid, and potentially up to 12% of average electricity demand;"[2043] "direct ownership of 4 power plants";[2044] direct ownership of the Henry Bath global network of metals warehouses;[2045] and an industrial metal inventory that "was as high as $8 [billion]."[2046] The 2012 Summary Report also noted that JPMorgan and Goldman together had a "total of 20-25 ships under time charters or voyages transporting oil [and] Liquified Natural Gas."[2047]

In addition, the 2012 Summary Report identified multiple concerns with JPMorgan's physical commodity operations. One concern was that JPMorgan had insufficient capital and insurance to cover potential losses from a catastrophic event. The report noted at one point that, while JPMorgan had calculated a potential oil spill risk of $497 million, through "aggressive assumptions" and "diversification benefits," it had reduced that total by nearly 90% to $50

[2037] See undated "Membership[:] Ring dealing," LME website, http://www.lme.com/en-gb/trading/membership/category-1-ring-dealing/j_p_morgan-securities-plc/.
[2038] 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-301538 -592, at 547.
[2039] Id. at 546.
[2040] Id. at 547.
[2041] See 10/3/2012 "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team" (hereinafter, "2012 Summary Report"), FRB-PSI-200477-510 [sealed exhibit].
[2042] Id. at 485.
[2043] Id.
[2044] Id.
[2045] Id. at 486.
[2046] Id.
[2047] Id. See also 4/2011 "Global Commodities – Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 095 (indicating JPMorgan then had "13 Time Chartered Vessels").

million, allocating risk capital for only that smaller amount.[2048] The 2012 Summary Report also noted that JPMorgan had determined that the "operational and event risks of owning power facilities" was capped at the dollar value of those facilities in the event of their total loss, with some insurance to cover "the death and disability of workers" and some facility replacement costs, but leaving all other expenses, including a "failure to deliver electricity under contract," to be paid by the holding company.[2049] At another point, the 2012 Summary Report compared the level of JPMorgan's capital and insurance reserves against estimated costs associated with "extreme loss scenarios," and found that "the potential loss exceeds capital and insurance" by $1 billion to $15 billion dollars.[2050] If JPMorgan were to incur losses from its physical commodity activities while maintaining insufficient capital and insurance protections, the Federal Reserve, and ultimately U.S. taxpayers, could be asked to rescue the firm.

The 2012 Summary Report expressed concerns about JPMorgan attempts to expand its physical commodity activities still further. It described several recent instances in which the Federal Reserve had denied JPMorgan requests for new activities, including trading oil products not approved by the CFTC for trading on exchanges, and keeping rather than divesting its ownership of the Henry Bath warehouses.[2051] The 2012 Summary Report also noted that JPMorgan had booked "significant amounts of base metals in the national bank entity" that, together with the bank's other physical commodities, produced aggregate holdings of "10.0% of tier 1 capital as of Sept '12 … an all time high in physical holdings."[2052] As discussed below, a JPMorgan report to the Federal Reserve, together with other information provided to the Subcommittee, indicates that, in September 2012, it actually had about $17.4 billion in physical commodity assets (excluding its holdings of gold, silver, and commodity-related merchant banking assets), which was then equal to nearly 12% of its Tier 1 capital.[2053] At the time, JPMorgan was subject to a Federal Reserve limit that prohibited its physical commodity assets from exceeding 5% of its Tier 1 capital, but JPMorgan had interpreted that limit to allow it to exclude major categories of assets, bringing its total below the 5% limit.[2054]

In 2013, when the Subcommittee asked JPMorgan about its physical commodity activities, the financial holding company provided information that, consistent with the Federal Reserve's 2012 Summary Report, illustrated its far-reaching commodity operations. JPMorgan reported trading in the physical commodities of cocoa, coffee, aluminum, copper, gold, lead, nickel, palladium, platinum, silver, tin, zinc, coal, crude oil, electricity, heating oil, gasoline, jet

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[2048] 2012 Summary Report, at FRB-PSI-200477 – 510, at 493 [sealed exhibit].
[2049] Id. at 497.
[2050] Id. at 498, 509. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.
[2051] Id. at 505.
[2052] Id. at 506.
[2053] See 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387. See also discussion of JPMorgan's compliance with the 5% limit, below, including its decision to exclude its bank's assets when calculating its physical commodity holdings for purposes of complying with the Federal Reserve's 5% limit.
[2054] For more information, see discussion below on JPMorgan's involvement with size limits.

kerosene, and natural gas.[2055] JPMorgan also reported maintaining inventories of many physical commodities. In 2011 (the last complete year of figures provided to the Subcommittee), those inventories included, at various times, as much as 3.3 million metric tons of aluminum (an amount which is more than half of U.S. aluminum consumption that year[2056]), 200,000 metric tons of copper, 100,000 metric tons of lead, 6.4 million barrels of crude oil, 3.6 million barrels of heating oil, 900,000 barrels of gasoline, 3.4 million barrels of jet kerosene, and 51.9 billion cubic feet of natural gas.[2057] In addition, JPMorgan reported owning or controlling tolling agreements at 31 power plants.[2058]

When JPMorgan first met with the Subcommittee, it indicated that the holding company was in the process of exiting the physical commodity business. In 2013, it sold about half its power plants.[2059] In March 2014, JPMorgan announced publicly that it had reached agreement to sell a large portion of its physical commodities operations, including its physical oil, gas, power, warehousing facilities, and energy transportation operations, to Mercuria Energy Group Ltd. for approximately $3.5 billion.[2060] When the sale was finalized in October 2014, only about one-third of the assets actually went to Mercuria, at a cost of about $800 million.[2061] JPMorgan told the Subcommittee that it had sold most of the remaining two-thirds to other buyers, including its metals inventory, oil supply contract with a Philadelphia refinery, and other assets.[2062] JPMorgan told the Subcommittee that, as of October 2014, it had dramatically reduced its involvement with physical commodities.[2063]

[2055] 9/10/2013 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorganChase-06-000001-013, at 002 - 005. See also 9/2013 "Global Commodities Compliance Self Assessment," prepared by JPMorgan, FRB-PSI-301370 - 378, at 372.

[2056] See undated "Primary Aluminum Consumption, 2011-2013," European Aluminum Association website, http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/ (indicating that North American primary aluminum consumption in 2011 was 5.1 million metric tons).

[2057] 3/22/2013 JPMorgan legal counsel letter to Subcommittee, JPM-COMM-PSI-000015 - 019, at 018.

[2058] See 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," JPM-COMM-PSI-000022 - 025.

[2059] 7/26/2013 "J.P. Morgan to Explore Strategic Alternatives for its Physical Commodities Business," https://investor.shareholder.com/jpmorganchase/releasedetail.cfm?releaseid=780681; "From Refineries To Power Plants – A Rundown Of JP Morgan's Huge Portfolio Of Physical Assets," Reuters, Jonathan Leff and David Sheppard (7/28/2013), http://www.businessinsider.com/jp-morgan-portfolio-of-physical-assets-2013-7.

[2060] 3/19/2014 JPMorgan press release, "J.P. Morgan announces sale of its physical commodities business to Mercuria Energy Group Limited." https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1394963095027&c=JPM_Content_C; 2014 JPMorgan Resolution Plan, at 9.

[2061] 10/3/2014 JPMorgan press release, "J.P. Morgan Completes Sales of Physical Commodities Assets," http://investor.shareholder.com/jpmorganchase/releasedetail.cfm?releaseid=874514; Subcommittee briefing by JPMorgan (10/10/2014).

[2062] Subcommittee briefing by JPMorgan (10/10/2014).

[2063] Id. See also "JPMorgan has not 'exited physical commodities' despite sale," Financial Times, Neil Hume (11/3/2014), http://www.ft.com/intl/cms/s/0/00a2ac9c-60c7-11e4-894b-00144feabdc0.html#axzz3IF0BzSSM (quoting John Anderson, co-head of the JPMorgan Global Commodities Group: "It's a bit of a misnomer to say we have exited physical commodities. … We won't move crude around anymore but we will finance oil in tanks.").

B. JPMorgan Involvement with Electricity

JPMorgan is an active trader in the physical and financial electricity markets. It entered the power plant business for the first time in 2008, when in the midst of the financial crisis, at the request of the Federal Reserve, JPMorgan acquired the assets of Bear Stearns. Bear Stearns controlled over two dozen power plants at the time. As part of that transaction, JPMorgan acquired "tolling agreements" that enabled it to supply fuel to the power plants and then sell the power they produced to wholesalers. JPMorgan also acquired direct ownership interests in a number of power plants. In 2010, JPMorgan increased its power plant activities by acquiring control over four more power plants, including two from a larger acquisition of physical commodity assets from RBS Sempra. At its height, JPMorgan owned or had rights to the energy output of 31 power plants across the country. According to one 2013 press report, JPMorgan controlled "more than 2,950 megawatts of electricity through such deals, enough to power every one of Indiana's 2.8 million homes."[2064]

When JPMorgan acquired its power plants, it did not have authority to own or operate them, and sought broad authority from the Federal Reserve to conduct power plant activities. The Federal Reserve eventually authorized JPMorgan to enter into tolling agreements, energy management contracts, and long-term supply contracts with power plants, but declined to authorize JPMorgan to take direct ownership of a commercial power plant as a complementary activity. JPMorgan responded by asserting merchant banking authority to retain its direct ownership of the three power plants. JPMorgan also entered into several disputes with state and federal electricity regulators over how it was conducting its power plant activities. In July 2013, JPMorgan paid $410 million to the Federal Energy Regulatory Commission (FERC) to settle charges that it used manipulative bidding tactics that produced excessive wholesale electricity payments in California and Michigan. Also in 2013, FERC ordered JPMorgan to stop blocking the modification of two California power plants to improve grid reliability. In 2014, under pressure from the Federal Reserve, JPMorgan began exiting the power plant business.

JPMorgan's power plant activities raise multiple concerns, including market manipulation, insufficient capital and insurance to protect against catastrophic event risks, and inadequate safeguards to stop financial holding company involvement with impermissible physical commodity assets.

(1) Background on Electricity

Electricity is a physical product that is produced from the conversion of natural resources such as oil, gas, uranium, solar energy, water, or wind into a flow of electrons.[2065] Electricity is a personal and commercial necessity today, providing lighting and heating for residential homes, businesses, and governments, while powering computers, electronic devices, machines, and an increasing number of vehicles. Since electricity is produced by a flow of electrons, it is not

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[2064] "JPMorgan's U.S. power plants and energy trading deals," Reuters (7/25/2013), http://www.reuters.com/article/2013/07/25/jpmorgan-ferc-idUSL1N0FV0KF20130725.

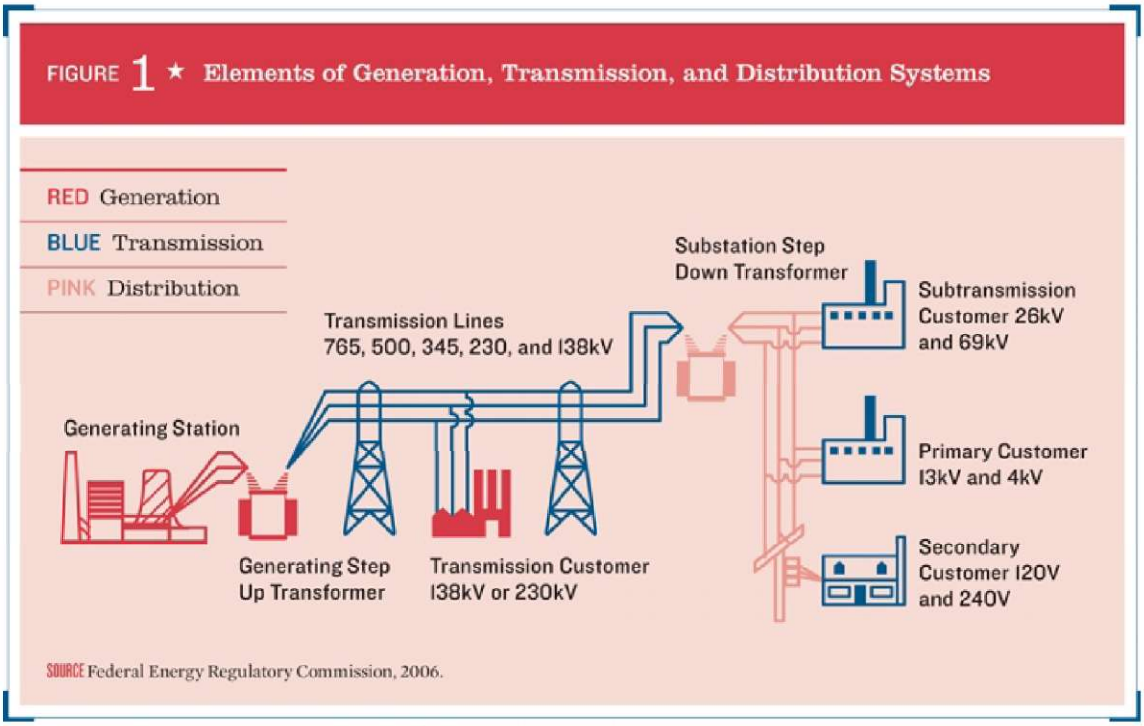
[2065] "Energy Primer: A Handbook of Energy Market Basics," Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 1, http://www.ferc.gov/market-oversight/guide/energy-primer.pdf.

easily stored and, in most cases, must be produced as required. Supply and demand change continuously, leading to great variations in price.

Electricity Production. Electricity is different from most physical commodities in that it is a secondary energy source – that is, it is produced through the conversion of other commodities, including coal and natural gas.[2066] According to the U.S. Energy Information Administration, in 2013, about 39% of the 4 trillion kilowatt-hours of electricity generated in the United States came from power plants fueled by coal.[2067] Power plants fueled by natural gas provided roughly 27% of the U.S. electricity supply.[2068] Other prominent sources of electricity in the United States include nuclear energy, hydropower, and renewable energy sources such as solar and wind energy.[2069]

Electricity Infrastructure. The process of providing electricity for end users in the United States involves three major types of infrastructure. First, electricity is produced at one of the 5,800 major power plants across the country or at one of many smaller generation facilities.[2070] Second, the electricity is transported across a series of high voltage transmission lines to more localized population centers across the country.[2071] As of 2008, the United States contained approximately 450,000 miles of those power lines.[2072] Third, local distribution systems transport the electricity to its final destination in homes, businesses, and government offices, either by overhead power lines or underground cables.[2073] This three-step process is summarized in the following graphic:

[2066] Id. at 1.
[2067] "Electricity in the United States," U.S. Energy Information Administration (8/12/2014), http://www.eia.gov/energyexplained/index.cfm?page=electricity_in_the_united_states.
[2068] Id.
[2069] "What is U.S. electricity generation by energy source?," U.S. Energy Information Administration (8/12/2014), http://www.eia.gov/tools/faqs/faq.cfm?id=427&t=3.
[2070] "Failure to Act: The Economic Impact of Current Investment Trends in Electricity Infrastructure," American Society of Civil Engineers (2011), at 15, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE41%20report_Final-lores.pdf.
[2071] Id.
[2072] Id.
[2073] Id.



Source: Federal Energy Regulatory Commission website, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE41%20report_Final-lores.pdf

Electricity has been generated and transported in this fashion since the development of interconnected power lines in the 1920s.[2074] Due to the complexity of the system and aging infrastructure, the United States currently faces increasing grid reliability problems.[2075]

Electricity Markets. Electricity markets have two main components: retail and wholesale.[2076] As the names suggest, the retail market concerns the sale of electricity to end-users or consumers, while the wholesale market involves the sale of electricity between producers, distributors, traders, and electric utilities.[2077] Within the wholesale market, electricity is traded like any other commodity in both physical and financial trading venues.

Physical electricity is traded in two primary markets: the day-ahead market and the real-time market. As its name suggests, the day-ahead market produces binding schedules for the production and consumption of electricity one day before it is needed.[2078] Because of the difficulty inherent in storing electricity, the day-ahead market is as forward-looking a market as exists in the electricity markets. The real-time market operates to cover the differences between

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[2074] Id. at 16.
[2075] See, e.g., "U.S. Electrical Grid Gets Less Reliable as Outages Increase and R&D Decreases," Professor Massoud Amin, Director of the Technological Leadership Institute, University of Minnesota (2011 with updates), http://tli.umn.edu/blog/security-technology/u-s-electrical-grid-gets-less-reliable-as-outages-increase-and-rd-decreases/.
[2076] "Energy Primer: A Handbook of Energy Market Basics," Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 37, http://www.ferc.gov/market-oversight/guide/energy-primer.pdf.
[2077] Id.
[2078] Id. at 64.

what is provided for in the day-ahead market and the amount of electricity actually needed by end-users during the day.[2079] The real-time market is significantly smaller than the day-ahead market, accounting for only about 5% of total scheduled energy use.[2080] Both the day-ahead and real-time markets are subject to oversight by Regional Transmission Organizations (RTOs) and independent system operators (ISOs),[2081] which are independent, membership-based, non-profit organizations that "ensure reliability and optimize supply and demand bids for wholesale electric power."[2082]

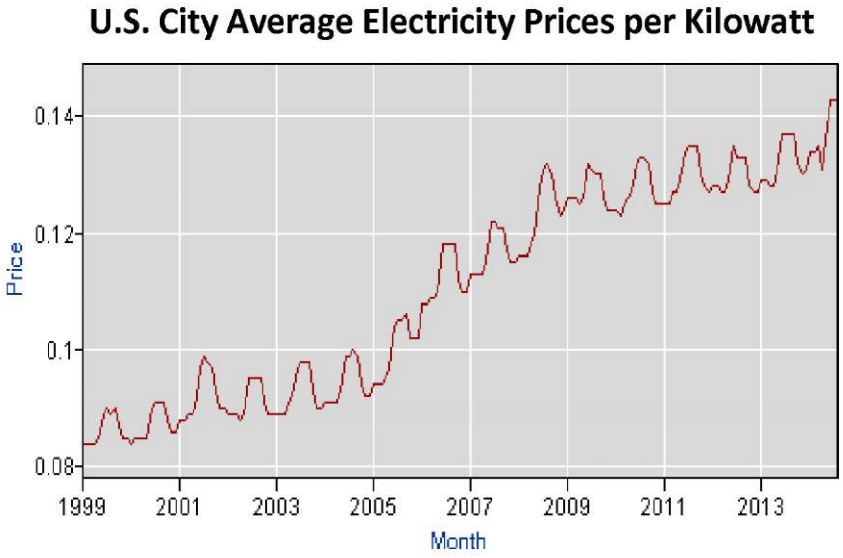
In addition to the physical markets, electricity can be traded in financial markets, using a variety of financial products, including electricity-related futures, swaps, and options. Electricity-related financial products are available on regulated exchanges and over the counter. The Chicago Mercantile Exchange (CME), for example, has offered electricity futures since 1996.[2083] One of the more widely traded is a financially-settled futures contract tracking prices for 40 megawatts-hours of electricity during real-time peak hours, which can be traded electronically or by open outcry on the floor of the NYMEX.[2084] Electricity futures, options, and swaps are also available on the Intercontinental Exchange[2085] and Nodal Exchange, a CFTC-registered exchange focused on electricity financial products for North American power markets.[2086] Participants in the electricity financial markets include power providers and suppliers seeking to hedge price risk, as well as speculators seeking to profit from changes in electricity prices.[2087] While much smaller than the crude oil and natural gas markets, electricity markets are nevertheless active, with many participants.[2088]

Electricity Prices. Electricity prices are typically volatile in the short term, due to the inability to store electricity and sudden swings in demand and supply due to weather, plant shutdowns, and other factors.[2089] Electricity prices have also been subject to high profile cases of price and supply manipulation, such as cases involving Enron[2090] and, more recently, major

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[2079] Id. at 65.
[2080] Id.
[2081] Id. at 64.
[2082] "About 60% of the U.S. Electric Power Supply is Managed by RTOs," U.S. Energy Information Administration, (4/4/2011), http://www.eia.gov/todayinenergy/detail.cfm?id=790.
[2083] 3/9/2012 presentation. "The Evolution of the CME Group Electricity Complex," CME Group. at 6, http://www.hks.harvard.edu/hepg/Papers/2012/Leach_Brad.pdf.
[2084] See contract specifications for the "PJM Western Hub Real-Time Peak Calendar-Month 2.5 MW Futures." CME website, http://www.cmegroup.com/trading/energy/electricity/pjm-peak-calendar-month-lmp-swap-futures_contract_specifications.html.
[2085] See, e.g., electricity listings on the Intercontinental Exchange website, https://www.theice.com/products/Futures-Options/Energy/Electricity
[2086] See electricity listings on the Nodal Exchange website, http://www.nodalexchange.com/.
[2087] See, e.g., "Utilities Turn to Global Markets to Hedge Commodity Risks," Black & Veatch, Samuel Glasser (2014), http://bv.com/Home/news/solutions/security-and-risk-management/utilities-turn-to-global-markets-to-hedge-commodity-risks.
[2088] Subcommittee analysis based on data provided by CFTC and other sources.
[2089] See, e.g., "Big bets on power cleared by regulator," Financial Times, Gregory Meyer (1/21/2014), http://www.ft.com/intl/cms/s/0/9a3d69d2-81f8-11e3-87d5-00144feab7de.html#axzz3FwLSMWhx ("Electricity is typically the most volatile commodity market because it cannot be easily stored, forcing huge price swings to balance supply and demand. Peak prices more than doubled overnight when extreme cold gripped the northern US in early January.").
[2090] See, e.g., United States v. Belden, Criminal Case No. CR 02-0313 MJJ (USDC ND Calif. 2002), Plea Agreement, file:///C:/Users/eb45550/Downloads/usbelden101702plea.pdf; "Enron Forced Up California Prices,

financial institutions.[2091] The following graph,[2092] prepared by the U.S. Bureau of Labor Statistics, illustrates the volatility and overall increase in electricity prices from 1999 to 2013:



Power Plants. The United States currently has about 5,800 major power plants across the country as well as smaller generation facilities that produce electricity.[2093] Many sell their electricity output directly to distributors or end-users. Alternatively, many power plants sell their electricity output to third parties via "tolling agreements," who market the electricity to others.

A tolling agreement typically requires the "toller" to make periodic payments to the power plant owner to cover the plant's operating costs plus a fixed profit margin.[2094] In exchange, the power plant gives the toller the right to all or part of the plant's power output. As part of the agreement, the toller typically supplies or pays for the fuel used to run the plant. Since the toller has the right to the electricity output, it also determines the price at which to sell it.

Documents Show," New York Times, Richard A. Oppel, Jr. and Jeff Gerth (5/7/2002), http://www.nytimes.com/2002/05/07/business/enron-forced-up-california-prices-documents-show.html.

[2091] See discussion, below.

[2092] U.S. Bureau of Labor Statistics Data, "Databases, Tables & Calculators by Subject," Series Id. No. APU000072610, U.S. city average, Electricity per kilowatt (10/14/2014).

[2093] "Failure to Act: The Economic Impact of Current Investment Trends in Electricity Infrastructure," American Society of Civil Engineers (2011), at 15, http://www.asce.org/uploadedFiles/Infrastructure/Failure_to_Act/SCE41%20report_Final-lores.pdf.

[2094] See 2008 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Royal Bank of Scotland Group plc, 94 Fed. Res. Bull. C60, C64 (2008) (hereinafter "RBS Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2008comp.pdf. The order authorized both the Royal Bank of Scotland and a joint venture called RBS Sempra Commodities that the Royal Bank of Scotland had formed with Sempra Energy, a U.S. energy company, to enter into tolling agreements.

Some power plants have also entered into Volumetric Production Payment (VPP) agreements with financial holding companies. VPP agreements typically require the financial holding company to provide upfront financing to the power plant for the purchase of fuel, in exchange for a designated share of the electricity produced when production occurs.[2095] According to JPMorgan, VPP agreements are usually between three and seven years in length, and typically give the financial holding company the right to receive title to the fuel.[2096] VPP transactions can be viewed as short term loans using electricity production as security for the loan.

Financial holding companies involved with power plants typically use tolling agreements or VPP agreements to obtain and sell electricity on the physical markets.

Power Plant Incidents. Power plants, like other industrial worksites, are subject to a variety of operational and catastrophic event risks. They include mechanical and electrical failure of equipment, fires associated with lack of maintenance, insufficient training of key individuals, and the use of substandard material.[2097] Since power plants vary in size, location, fuel source, age, and design, their risks are particular to the specific plant involved.

One of the worst power plant incidents in recent years involved the Tennessee Valley Authority (TVA) Kingston Fossil Plant in Tennessee. The coal-fueled Kingston Plant was built in the 1950s, to supply the nearby Oak Ridge atomic energy installations with electricity.[2098] On December 22, 2008, the walls of a containment dike holding coal ash gave way, suddenly releasing 5.4 million cubic yards of material into the surrounding area,[2099] enough to fill three football stadiums.[2100] Within an hour, approximately 300 acres were affected, as the fast moving ash destroyed homes and altered the natural landscape.[2101] Fortunately, no fatalities resulted. TVA has reportedly spent approximately $1.1 billion on cleanup costs, fines, and legal fees associated with the spill, with cleanup work scheduled to continue well into 2015.[2102] To cover

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[2095] 10/26/2004 letter from JPMorgan Chase legal counsel to the Office of the Comptroller of the Currency, "Commodity Derivative Activities of JPMorgan Chase Bank (the 'Bank')," OCC-PSI-00000266 - 298, at 272.
[2096] Id.
[2097] See, e.g., "Keeping power plants online with risk management," Utility Week, Paul Newton (3/2/2011), http://www.utilityweek.co.uk/news/Keeping-power-plants-online-with-risk-management/795972#.VBb9_2ORKUw.
[2098] See "Executive Summary for Root Cause Analysis of Kingston Dredge Cell Failure," TVA website (6/26/2009), at 1, http://www.tva.gov/kingston/rca/FINAL-062609_Executive_Summary-REV3.pdf.
[2099] Id.
[2100] "The Spill: What happened and why?" educational video on TVA website, http://www.tva.gov/kingston/education/index.htm.
[2101] See "Executive Summary for Root Cause Analysis of Kingston Dredge Cell Failure," TVA website (6/26/2009), at 1, http://www.tva.gov/kingston/rca/FINAL-062609_Executive_Summary-REV3.pdf; "Ash Slide at TVA Kingston Fossil Plant," Tennessee Department of Environment & Conservation, http://tn.gov/environment/kingston/.
[2102] "TVA deserves credit for coal-ash spill cleanup efforts," Knoxville News Sentinel, editorial, (7/2/2013), http://www.knoxnews.com/opinion/editorials/editorial-tva-deserves-credit-for-coal-ash-spill. See also "Coal Ash Spill Cleanup Could Cost $825 Million," NBC News, (2/12/2009), http://www.nbcnews.com/id/29166267/ns/us_news-environment/t/coal-ash-spill-cleanup-could-cost-million/#.VDRTTaPD9aQ.

the costs, TVA imposed a surcharge on customer electricity bills, projected to continue until 2024.[2103]

Another major power plant incident occurred at the Kleen Energy Systems power station in Middletown, Connecticut, which experienced a major explosion during the construction of the plant in February 2010. The blast killed five and injured dozens, and tremors with earthquake force could be felt across much of the state.[2104] Early estimates from property damage and business interruption alone put the losses at $150 million, which did not include liabilities resulting from death and injuries due to the accident.[2105]

Other events, such as power plant fires, are more common. Earlier this year, for example, a four-alarm fire at a power plant in Colorado Springs, Colorado substantially damaged the plant, injured one worker, caused a brief power loss for 22,000 customers, and closed the plant.[2106] The fire chief predicted that the plant would be "inoperable for some time," and utilities officials indicated that the plant would have to purchase replacement power from other sources at a higher cost.[2107] The plant had previously experienced another fire in 2002.

Regulatory Framework. Electrical power plants are subject to regulation by multiple agencies at the federal, regional, and state levels. The primary federal regulator is the Federal Energy Regulatory Commission (FERC), which oversees interstate wholesale electricity rates, the reliability of the electrical grid, and the stability of energy markets in the United States.[2108] Regional transmission organizations (RTOs) and independent system operators (ISOs), formed at the regional or state level, also have key oversight responsibility for power plant facilities and electricity rates.[2109] Their responsibilities include tariff administration, monitoring of wholesale electricity markets, and management of the transmission system.[2110]

(2) JPMorgan Involvement with Power Plants

Over the course of three years, from 2008 to 2010, JPMorgan acquired 31 power plants across the country. JPMorgan has valued its power plant tolling agreements at more than $2 billion,[2111] with related capacity payments worth $1.2 billion.[2112] At the time of acquisition,

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[2103] "TVA deserves credit for coal-ash spill cleanup efforts," Knoxville News Sentinel editorial, (7/2/2013), http://www.knoxnews.com/opinion/editorials/editorial-tva-deserves-credit-for-coal-ash-spill.

[2104] See, e.g., "5 Dead, Dozens Hurt in Connecticut Power Plant Blast." New York Times, Robert D. McFadden (2/7/2010), http://www.nytimes.com/2010/02/08/nyregion/08explode.html?pagewanted=all&_r=0.

2105 "Munich Re leads coverage on Kleen Energy Explosion" Business Insurance, Michael Bradford And Zack Phillips (2/14/2010), http://www.businessinsurance.com/article/20100214/ISSUE01/302149988.

[2106] "Drake Power Plant fire will be costly; hard to say how much," The Gazette (5/6/2014), http://gazette.com/drake-power-plant-fire-will-be-costly-hard-to-say-how-much/article/1519474.

[2107] Id.

[2108] Subcommittee briefing by FERC (7/30/2013); 7/29/2014 testimony of FERC Acting Chairman Cheryl A. LaFleur before the House Committee on Energy and Commerce, Subcommittee on Energy and Power. "FERC Perspective: Questions Concerning EPA's Proposed Clean Power Plan and other Grid Reliability Challenges," http://www.ferc.gov/CalendarFiles/20140729091732-LaFleur-07-29-2014.pdf.

[2109] "Energy Primer: A Handbook of Energy Market Basics," Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 60 - 62, http://www.ferc.gov/market-oversight/guide/energy-primer.pdf.

[2110] Id. at 63 - 65.

[2111] See, e.g., 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan. FRB-PSI-301382 -396, at 387.

JPMorgan did not have authority to enter into a tolling agreement with a power plant, much less own one, and petitioned the Federal Reserve for broad authority to conduct power plant activities. The Federal Reserve eventually authorized JPMorgan to enter into tolling agreements, energy management contracts, and long-term supply contracts with power plants, but declined to authorize JPMorgan to take direct ownership of a commercial power plant, as an impermissible mixing of banking and commerce. JPMorgan responded by asserting that it would retain its direct ownership of three power plants through its merchant banking authority. JPMorgan also entered into a number of regulatory battles with state and federal regulators over its power plant activities. Among other penalties, JPMorgan was barred from bidding in the California wholesale electricity market for six months in 2013, and, in July 2013, paid $410 million to settle charges that it had manipulated wholesale electricity prices in California and Michigan. That same year, JPMorgan was ordered by FERC to stop blocking plant modifications to improve grid reliability. JPMorgan told the Subcommittee it has now determined to exit the power plant business, but will need four more years to do so.

(a) Acquiring Power Plants

JPMorgan acquired control of 31 power plants over a two-year period from 2008 to 2010. In most instances, it acquired a tolling agreement to purchase the plant's electricity output; in some cases, it acquired a direct ownership interest in the power plant. It acquired the power plants in three phases, in transactions involving Bear Stearns, AES, and RBS Sempra.

2008 Bear Stearns Acquisition. JPMorgan first entered the power plant business in 2008, when at the request of the Federal Reserve, it purchased The Bear Stearns Companies, Inc. which was then under financial distress.[2113] As part of that acquisition, JPMorgan acquired Bear Energy LP which owned or held tolling agreements with 27 power plants across the country.[2114]

Bear Energy, formed in 2006, was located in Houston.[2115] By 2008, it was engaged in a wide range of physical and financial energy-related commodity activities. They included energy and electricity trading, power plant management, and power plant restructuring services. It held ownership interests in or tolling agreements with over two dozen power plants.[2116] The acquisition of Bear Energy gave JPMorgan a significant presence in the power plant business.

Of the 27 power plants that Bear Energy transferred to JPMorgan in May 2008, 16 were located in California.[2117] Three were located in Colorado, and one each in Alabama, Florida,

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[2112] See 9/30/2014 letter from JPMorgan legal counsel to Subcommittee, chart at JPM-COMM-PSI-000048.
[2113] See 11/4/2009 memorandum, "Control Validation Target Exam," prepared by JPMC Ventures Energy Corporation, FRB-PSI-200611 - 632, at 627; 8/2/2013 Federal Reserve press release, "Bear Stearns, JPMorgan Chase, and Maiden Lane LLC," http://www.federalreserve.gov/newsevents/reform_bearstearns.htm.
[2114] See undated 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," (hereinafter, "JPMorgan Power Plants Chart"), JPM-COMM-PSI-000022 - 025.
[2115] Subcommittee briefing by JPMorgan (2/11/2014). See also "Bear Stearns's Trading Unit Draws Interest," Wall Street Journal, Ann Davis (4/5/2008), http://online.wsj.com/articles/SB120735754695191559.
[2116] Subcommittee briefing by JPMorgan (2/11/2014); 7/17/2008 "Quarterly review of risk, performance and significant developments," prepared by OCC regarding JPMorgan, FRB-PSI-303773 - 818, at 777 (listing Bear Stearns power plant assets acquired by JPMorgan) [sealed exhibit].
[2117] JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025.

Louisiana, Maine, Michigan, New Jersey, Pennsylvania, and Texas.[2118] One was a coal-fired plant; the rest were fueled by natural gas.[2119] According to the head of Bear Energy, Paul Posoli, who was hired by JPMorgan to continue to run the Houston operation: "At the time of the merger, Bear Energy was managing over 9,000MW [megawatts] of generation … and [had] a very established national presence."[2120]

JPMorgan used its key commodities subsidiary, J.P. Morgan Ventures Energy Corporation (JPMVEC), to conduct its power plant business.[2121] Of the 27 power plants transferred from Bear Energy, JPMVEC assumed tolling agreements for 17. JPMVEC also took a direct ownership interest in eight power plants. Of those eight, it took a 100% ownership interest in two power plants in Colorado; a 50% ownership share in another Colorado power plant; a 30% ownership share in three power plants in California; a 14% ownership share in one power plant in Texas; and a 1% ownership share in a power plant in Maine.[2122] In addition, in one instance involving a power plant in California, rather than take an ownership interest or tolling agreement, JPMorgan simply assumed a lease for the plant.[2123] Finally, through its Global Commodities Group Principal Investments unit, JPMorgan took a 100% ownership stake in one power plant in Florida, Central Power & Lime.[2124] Ownership was held through a subsidiary of JPMVEC.[2125] To conduct its new power plant activities, JPMorgan retained the head of Bear Energy and many of its employees in a new JPMorgan "Houston Energy" office.[2126]

2010 Huntington Acquisitions. Almost two years later, JPMorgan acquired short-term tolling agreements on the electricity output of two more Southern California power plants, Huntington Beach 3 and 4.[2127] JPMorgan entered into the new tolling agreements with AES Corporation, the owner of the plants.[2128] JPMorgan told the Subcommittee that it entered into the tolling agreements, in part, because it had already acquired tolling agreements with the two sister power plants on the same site, Huntington Beach 1 and 2, through the 2008 Bear Stearns

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[2118] Id.
[2119] Subcommittee briefing by JPMorgan (10/10/2014).
[2120] "JP Morgan's integration of Bear Energy," Risk.net (1/13/2009), http://www.risk.net/energy-risk/feature/1523435/jp-morgan-integration-bear-energy.
[2121] See, e.g., 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," (hereinafter "JPM Notice Requesting Tolling Agreements"), prepared by JPMorgan, PSI-FederalReserve-02-000012 - 033, at 014, footnote 2.
[2122] JPMorgan Power Plants Chart, JPM-COMM-PSI-000022 - 025.
[2123] Id. at 025; Subcommittee briefing by JPMorgan (10/10/2014). The lease expired in June 2010, and JPMorgan terminated its relationship with the power plant at that time.
[2124] See JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025; 10/2009 "Global Commodities Deep Dive Risk Review," prepared by JPMorgan, FRB-PSI-200634 - 655, at 644 (identifying Central Power as a 100% owned equity asset in a list of assets in the "Global Commodities Principal Investments Portfolio"); Subcommittee briefing by JPMorgan (10/10/2014).
[2125] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.
[2126] See, e.g., 7/17/2008 "Quarterly review of risk, performance and significant developments," prepared by OCC regarding JPMorgan, FRB-PSI-303773 - 780, at 777.
[2127] JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025; In Re Make-Whole Payments and Related Bidding Strategies, Docket Nos. IN11-8-000 and IN13-5-000, FERC "Order Approving Stipulation and Consent Agreement (7/30/2013), at 4, ¶ 19, and "Stipulation and Consent Agreement" (7/30/2014) at 3, ¶ 8, 144 FERC ¶ 61,068; Subcommittee briefing by JPMorgan (4/23/2014).
[2128] Subcommittee briefing by JPMorgan legal counsel (10/29/2014).

acquisition.[2129] JPMorgan stipulated in legal pleadings with FERC that it entered into the tolling agreements for the two plants "to develop experience with the California market before the AES 4000 plants [the California power plants JPMorgan had previously acquired from Bear Stearns] began returning to JPMVEC's control in January 2011."[2130] JPMVEC assumed control of the Huntington Beach 3 and 4 tolling agreements in January 2010. Those tolling agreements increased JPMorgan's portfolio to 29 power plants.

2010 RBS/Sempra Acquisition. Six months later, in July 2010, JPMorgan expanded its power plant activities yet again when it purchased energy-related commodity assets from RBS Sempra, a joint venture between the Royal Bank of Scotland Group (RBS) and Sempra Energy, for $1.7 billion.[2131] Along with other assets, it acquired two more power plants, one in Washington state and one in Maryland.[2132] Both were fueled with natural gas.[2133] JPMVEC assumed a tolling agreement with the plant in Washington.[2134] In contrast, through its Global Commodities Group Principal Investments unit, JPMorgan took direct ownership of the Panda Brandywine plant in Maryland, acquiring a 100% ownership stake. JPMorgan held ownership through its subsidiary, JPMVEC.[2135] JPMorgan then leased the plant back to the owners who agreed to run it, and entered into a tolling agreement to acquire 100% of the plant's electricity output.[2136] This complex arrangement raised a number of issues over time.

Two months later, in September 2010, separate from the RBS Sempra transaction, JPMorgan acquired 100% of the shares of the Kinder Jackson power plant in Jackson, Michigan, becoming a direct owner of the plant.[2137] JPMorgan already had a tolling agreement with the plant, which it acquired in 2008, as part of the Bear Stearns acquisition. In 2010, when the plant was put up for sale, JPMorgan's Global Commodities Group Principal Investments unit arranged for the outright purchase of the power plant from Kinder Morgan Power Company and others for about $143 million.[2138] Ownership of the plant was held through a subsidiary of JPMVEC.[2139]

Generally, when JPMorgan entered into a tolling agreement with a power plant, it promised, not just to buy the electricity produced, but also to supply natural gas to the plant for the duration of the tolling agreement.[2140] In addition, JPMorgan entered into specific long-term fuel supply agreements with three power plants acquired from Bear Stearns.[2141]

[2129] Subcommittee briefing by JPMorgan (4/23/2014). See also JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.
[2130] In Re Make-Whole Payments and Related Bidding Strategies. Docket Nos. IN11-8-000 and IN13-5-000, "Stipulation and Consent Agreement" (7/30/2013), at 3, ¶8, 144 FERC ¶ 61,068.
[2131] Subcommittee briefing by JPMorgan (2/11/2014).
[2132] JPMorgan Power Plants Chart, JPM-COMM-PSI-000022 - 025, at 025; Subcommittee briefing by JPMorgan (4/23/2014).
[2133] Subcommittee briefing by JPMorgan (10/10/2014).
[2134] JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.
[2135] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.
[2136] Subcommittee briefing by JPMorgan (10/10/2014).
[2137] JPMorgan Power Plants Chart, at JPM-COMM-PSI-000022 - 025.
[2138] See 8/13/2010 memorandum, "KJ Toll Disposition Plan," prepared by JPMorgan Commodity Principal Investment Team for the Commodities Principal Investment Committee, FRB-PSI-300066 - 093, at 066.
[2139] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 -008, at 002.
[2140] Id.
[2141] Id.

Inadequate Oversight. About a year after JPMorgan assumed control of the Houston office that formerly belonged to Bear Energy and which JPMorgan was using to oversee its power plant assets, the Federal Reserve conducted an examination to "gain a better understanding of the firm's physical energy trading activities and the processes in place to control and manage risks."[2142] The examination tested, in part, whether JPMorgan had adequately extended its "corporate compliance program" to include the new Houston office.[2143] The Federal Reserve concluded it had not.[2144] A 2010 internal Federal Reserve examination document also noted that JPMorgan's own internal audit team had found that JPMVEC did not have the technical capability to evaluate its power plants' compliance with "technical, operational and engineering suitability standards":

> "For power plants in which JPMVEC has an equity interests, internal audit indicated that it does not have the technical, operations or engineering capability to review the compliance programs of such power plants."[2145]

In response to the Federal Reserve's supervisory letter raising the issue, JPMorgan formulated a plan to strengthen its compliance oversight of the Houston office and its supervision of JPMVEC's power plants.[2146]

31 Power Plants. The following chart summarizes JPMorgan's two-year acquisition effort which, by 2010, produced its portfolio of 31 power plants.

[2142] 1/5/2010 report, "Combined Scope/Product Memo[:] JPMC Energy Ventures Corporation Corporate Compliance," prepared by the Federal Reserve Bank of New York, FRB-PSI-300210 - 220, at 212 [sealed exhibit].
[2143] Id.
[2144] See 1/28/2010 supervisory letter from Federal Reserve Bank of New York to JPMorgan, FRB-PSI-300332 - 334 [sealed exhibit].
[2145] 1/5/2010 report, "Combined Scope/Product Memo[:] JPMC Energy Ventures Corporation Corporate Compliance," prepared by the Federal Reserve Bank of New York, FRB-PSI-300210 - 220, at 217 [sealed exhibit].
[2146] 3/15/2010 letter from JPMorgan to Federal Reserve Bank of New York, "JPMorgan Chase & Co. Houston Energy," FRB-PSI-301163 - 168.

Power Plants Owned or Controlled Via Tolling Agreements by JPMorgan Since 2008

Power Plant	Location	MW Capacity	Fuel	Date JPM Assumed Control	JPM Entity	Owned or Tolled by JPM	Percentage of JPM ownership	Current Status
OLS Camarillo	Camarillo, California	29	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	30%	Sold
OLS Chino	Chino, California	29	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	30%	Sold
Carson Cogeneration	Carson, California	49	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	33%	Sold
Grays Harbor	Satsop. Washington	480 (Summer) 520 (Winter)	Gas	12/1/2010 (RBS/Sempra Acquisition)	JPMVEC	Tolled	N/A	Terminated
Greeley Cogen	Greeley, Colorado	32	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Sold
Thermo Cogen	Ft. Lupton, Colorado	272	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Sold
Brush Cogeneration	Brush, Colorado	70	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	50%	Sold
Gregory Power Partners	Gregory, Texas	345	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	14%	Sold
Evangeline (Cleco)	Evangeline. Louisiana	758	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Terminated
Ironwood	South Lebanon. Pennsylvania	664	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold
Red Oak	Sayreville. New Jersey	764	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold
Rumford Cogen	Rumford, Maine	85	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	1%	Sold
Mojave Cogeneration	Boron, California	55	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Leased	100%	Lease Not Renewed
Alamitos 1	Long Beach, California	184	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 2	Long Beach, California	184	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 3	Long Beach, California	336	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018

Alamitos 4	Long Beach, California	336	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 5	Long Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Alamitos 6	Long Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 1	Huntington Beach, California	225.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 2	Huntington Beach, California	225 .8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Huntington Beach 3	Huntington Beach, California	225	Gas	1/1/2010 (AES Contract)	JPMVEC	Tolled	N/A	Taken Offline
Huntington Beach 4	Huntington Beach, California	227	Gas	1/1/2010 (AES Contract)	JPMVEC	Tolled	N/A	Taken Offline
Redondo Beach 5	Redondo Beach, California	183.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 6	Redondo Beach, California	183.8	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 7	Redondo Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Redondo Beach 8	Redondo Beach, California	504	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Tolling Agreement until end of 2018
Lindsay Hill (Tennaska)	Billingsley, Alabama	844	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Tolled	N/A	Sold to Mercuria
Kinder Jackson	Jackson, Michigan	545	Gas	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Expected sale in 2016
Central Power & Lime	Brooksville, Florida	60	Biomass	5/30/2008 (Bear Stearns Acquisition)	JPMVEC	Owned	100%	Operated by Florida Power & Development
Panda Brandywine	Brandywine, Maryland	230	Gas Oil	12/1/2010 (RBS/Sempra Acquisition)	JPMVEC	Owned	100%	JPM energy mngmt contract; 3d party operator

Source: JPMorgan Power Plants Chart, JPM-COMM-PSI-000022-025

(b) Requesting Broad Authority for Power Plant Activities

JPMorgan got into the power plant business as a result of the larger Bear Stearns acquisition during the financial crisis. At that time, JPMorgan did not have authority to conduct power plant activities, but the Federal Reserve Bank of New York gave JPMorgan a two-year grace period to decide how to handle the Bear Stearns assets. A little over a year after it acquired the power plants, JPMorgan asked the Federal Reserve for broad complementary authority to own and manage them. While the Federal Reserve agreed to provide JPMorgan with complementary authority to enter into tolling agreements, energy management, and long-term supply contracts with the power plants, the Federal Reserve declined to allow JPMorgan simply to buy power plants outright or engage in so-called "financial restructuring" of power plants it owned. JPMorgan responded in part by asserting that it would nevertheless retain direct ownership of three power plants by treating them as merchant banking investments. After the Federal Reserve expressed increasing concern about its power plant activities and JPMorgan entered into multiple regulatory disputes over how it was conducting those activities, JPMorgan decided to exit the business over the next four years.

Two-Year Grace Period. Prior to acquiring the Bear Energy power plants in 2008, JPMorgan had never engaged in power plant activities, and never sought complementary authority to enter into a tolling agreement or other contract with a power plant. JPMorgan's 2005 complementary order did not explicitly address either power plants or electricity. As part of the Bear Stearns transaction, the Federal Reserve Bank of New York gave JPMorgan a letter stating that "any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years."[2147] That two-year grace period applied to the 27 power plants acquired from Bear Stearns, deeming them "permissible" assets. JPMorgan conducted power plant activities involving the Bear Stearns power plants throughout the two-year grace period, which extended from March 2008 to March 2010, while it sought an official grant of complementary authority to cover its power plant assets.

About two weeks after the Bear Stearns transaction in March 2008, the Federal Reserve issued the Royal Bank of Scotland (RBS) a complementary order that provided broader authority for physical commodity activities than prior complementary orders and, for the first time, explicitly authorized activities involving power plants and electricity.[2148] Specifically, the RBS order allowed RBS to enter into tolling agreements with power plant owners, energy management contracts with power generation facilities, and long-term electricity supply contracts with large industrial and commercial customers.[2149]

Request for Tolling and Energy Management Authority. On December 30, 2009, JPMorgan submitted two separate applications to the Federal Reserve to expand its 2005 complementary authority to match the authority provided to RBS for power plants and electricity.

[2147] 3/16/2008 letter from FRBNY to JPMorgan, FRB-PSI-19-000001 - 003 at 002. See also 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003. During that two-year grace period, JPMorgan sometimes referred to the power plants and related activities as "grandfathered activities," but that was a reference to their being allowed under the grace period; the assets were never held under the Gramm-Leach-Bliley grandfather clause since JPMorgan was ineligible to rely on that statutory authority for its physical commodity activities.

[2148] See RBS Order, at 94 Fed. Res. Bull. C60. The order applied to both the Royal Bank of Scotland and a joint venture called RBS Sempra Commodities that the Royal Bank of Scotland had formed with Sempra Energy, a U.S. energy company.

[2149] Id.

The first application requested complementary authority to enter into tolling agreements with power plant owners.[2150] In its application, JPMorgan provided the following expansive definition of the authority it was seeking, explaining that tolling agreements:

> "may involve, among other things, purchasing fuel used to produce electricity, entering into agreements for the transportation of fuel, entering into options to purchase electricity, taking title to electricity and entering into agreements for the transmission and sale of electricity."[2151]

JPMorgan wrote that one reason the Federal Reserve should grant the authority was that it would provide JPMorgan with access to "important market information":

> "The Complementary Activities will further complement the Existing Business by providing JPMVEC [JPMorgan's subsidiary] with important market information. The ability to be involved in the supply end of the commodities markets through tolling agreements provides access to information regarding the full array of actual producer and end-user activity in those markets. The information gathered through this increased participation will help improve JPMVEC's understanding of market conditions and trends while supplying vital price and risk management information that JPMVEC can use to improve its financial commodities derivative offerings. ...
>
> [B]y participating in the widest possible variety of commodities markets and transactions, JPMVEC will gain access to price and related market information and acquire more experience in the markets for physical commodities that it can use to better serve its customers and manage its own risks, which will lead to increased revenues and lower costs, all of which will improve JPMVEC's and JPM Chase's profits and enhance their soundness."[2152]

JPMorgan offered to accept the same limitations on the new authority as appeared in the RBS order. The key limitation was that JPMorgan would continue to limit the aggregate market value of all of its physical commodities resulting from physical commodity trading to no more than 5% of its Tier 1 capital, and that when calculating that aggregate value, it would include the present value of all capacity payments made in connection with any energy tolling agreement.[2153]

The second application requested complementary authority to enter into "energy management" agreements with power generators.[2154] In its application, JPMorgan provided a broader definition of energy management contracts than appeared in the RBS order.[2155] JPMorgan wrote:

[2150] JPM Notice Requesting Tolling Agreements, PSI-FederalReserve-02-000012 - 059. See also In Re Make-Whole Payments and Related Bidding Strategies, FERC Docket Nos. IN11-8-000 and IN13-5-000, FERC "Order Approving Stipulation and Consent Agreement (7/30/2013), 144 FERC ¶ 61,068, (hereinafter "Order Approving Stipulation and Consent Agreement") at 2, http://www.ferc.gov/EventCalendar/Files/20130730080931-IN11-8-000.pdf.
[2151] JPM Notice Requesting Tolling Agreements, at 013.
[2152] Id. at 019 - 020, 032.
[2153] Id. at 032 - 033.
[2154] 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," prepared by JPMorgan, PSI-FederalReserve-01-000561 - 567.

> "Under an EMA [energy management agreement], energy traders, schedulers, and related support personnel provide asset optimization services and accounting services to a power plant owner. The energy trader will provide market information and recommend hedging strategies, including capacity and transmission management services and advice regarding switching between fuel inputs. Energy traders and schedulers assist the plant owner with the acquisition and delivery of fuel inputs to the plant. In addition, the energy trader will provide interface services for the power plant owners with independent system operators ('ISOs')/regional transmission organizations ('RTOs') and will schedule plant output to ISOs/RTOs and other power purchasers based on energy prices in the open market. ... An energy trader may also provide credit intermediation services to the power plant owner with respect to the owner's counterparties. For example, in connection with such credit services, the energy trader might post collateral to an ISO or RTO on behalf of a plant owner as part of a credit arrangement to ensure delivery .... The energy trader, in turn, will collect money from the ISO or RTO and those funds will be available to the energy trader as a part of the plant owner's collateral arrangement with the energy trader."[2156]

JPMorgan offered to accept several limitations on the new energy management authority, modeled after the RBS order. The first was to ensure that "revenues attributable to JPMVEC's Energy Management Services will not exceed 5 percent of JPM Chase's total consolidated operating revenues."[2157] That 5% limit is substantially higher than the cap normally included in complementary orders limiting the market value of physical commodity holdings to no more than 5% of Tier 1 capital, but it was the same limit as provided to RBS.

Request for One-Year Extension. About a month later, on February 5, 2010, in the absence of a Federal Reserve ruling on its December 2009 applications, JPMorgan sent a letter to the Federal Reserve asking for a one-year extension of the Bear Stearns grace period so that it could continue to engage in "energy tolling, energy management and the purchase and financial restructuring of power plants," that would otherwise be impermissible activities.[2158] The request, which was eventually granted, enabled JPMorgan to continue its power plant activities until March 2011. In the meantime, it acquired additional power plant assets in January and July 2010, as described above.

Request for Abrogation of Volume Limits. In addition to requesting a one-year extension of the grace period, the February 2010 letter made several other requests to expand JPMorgan's power plant activities as well as its other physical commodity activities as a whole. First, the letter

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[2155] The RBS order described the approved energy management contracts as follows:

> "[T]he energy manager provides transactional and advisory services to power plant owners. The transactional services consist of SET [Sempra Energy Trading Corporation] acting as a financial intermediary, substituting its credit and liquidity for those of the owner to facilitate the owner's purchase of fuel and sale of power. SET's advisory services include providing market information to assist the owner in developing and refining a risk-management plan for the plant. SET also provides a variety of administrative services to support these transactions."

RBS Order, at 94 Fed. Res. Bull. C65.

[2156] 12/30/2009 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956," (hereinafter "JPM Notice to Provide Energy Management"), prepared by JPMorgan, PSI-FederalReserve-01-000561 - 567, at 564 - 565.

[2157] Id. at 566.

[2158] 2/5/2010 letter from JPMorgan to the Federal Reserve, FRB-PSI-300286 - 290, at 286.

asked the Federal Reserve essentially to eliminate any limit on JPMorgan's complementary physical commodity activities, including the cap linked to 5% of its Tier 1 capital.[2159] The letter asserted that the 5% cap might "curtail not only its tolling activities but also its other physical trading activities going forward," putting JPMorgan at a competitive disadvantage.[2160] The letter also objected to the much higher limit on its energy management services of 5% of its total consolidated operating revenues, contending "such limitations are not necessary from a safety and soundness perspective since the main components of this activity involve activities similar to those already conducted by JPMC."[2161] The letter proposed allowing its physical commodity activities to proceed without any volume limit, "pursuant to robust risk management processes subject to regulatory examination."[2162]

Request for Restructuring Authority. In addition to requesting elimination of all volume limits, the February 5 letter asked the Federal Reserve to allow it to continue to engage in another power plant activity which it called "financial restructuring."[2163] The letter described the activity as "purchasing equity interests in power plants and subsequently restructuring and renegotiating the power plant's commodity purchase agreements and energy sale agreements with a view to making the plant more efficient."[2164] The letter explained that the new activity was "a natural outgrowth of the energy management activities" and used the same expertise to restructure "the input and output contracts entered into by power plants."[2165] JPMorgan wrote:

> "[T]his activity involves investing for a financial return in a way that allows JPMC to gain valuable insight into the power market which can enhance JPMC's overall commodities business. ... JPMC conducts this activity as a component of its overall commodities trading and client business. JPMC's goal is to augment its financial trading and not run the operation of the plant as a commercial venture in a vacuum. As such, JPMC views this activity as complementary to JPMC's core commodities business."[2166]

The letter also indicated that JPMorgan might need to take ownership of power plants while the restructuring was going on, with a view toward selling the plants one to two years later. It explained that "[s]ubjecting this activity to merchant banking restrictions may not be feasible unless broad authority to renegotiate and act as counterparty to contracts with the plant is determined not to constitute day to day management of the plant."[2167]

In response to the letter, the Federal Reserve granted the one-year extension, allowing JPMorgan to continue to treat its power plant activities as permissible activities, including restructuring activities, until March 16, 2011, while it considered the other requests for expanded authority to conduct power plant and other physical commodity activities.[2168]

[2159] Id. at 287.
[2160] Id.
[2161] Id.
[2162] Id.
[2163] Id. at 288 - 289.
[2164] Id. at 288.
[2165] Id.
[2166] Id.
[2167] Id. at 289.
[2168] See 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit]; Subcommittee briefing by JPMorgan (4/23/2014).

New Complementary Authority. On June 30, 2010, 18 months after JPMorgan submitted its applications and more than two years after it initiated its power plant activities, the Federal Reserve granted some, but not all, of the new authority JPMorgan had sought.[2169] By letter, the Federal Reserve authorized JPMorgan to enter into tolling agreements and energy management contracts with power plant owners.[2170] The letter also "confirmed" JPMorgan's complementary authority to enter into long-term electricity supply contracts, but "only with large commercial and industrial end-users."[2171] The Federal Reserve letter reasoned that the restriction to large customers would ensure JPMorgan transacted with financially sophisticated purchasers and remained a wholesale intermediary.[2172] The letter also imposed a number of restrictions on the authorities it granted to ensure JPMorgan conducted its power plant activities in a safe and sound manner. The restrictions included limiting its tolling payments to not more than 5% of JPMorgan's Tier 1 capital, and limiting its energy management contract revenues to not more than 5% of JPMorgan's total consolidated operating revenues.[2173]

By allowing JPMorgan to hold tolling agreements, energy management contracts, and long term supply contracts with the power plants acquired from Bear Energy, the June 30 letter made the vast majority of its power plant activities permissible. In the case of three power plants that JPMorgan owned outright, however, the Central Power & Lime plant in Florida, Panda Brandywine plant in Maryland, and Kinder Jackson plant in Michigan, the new complementary order did not authorize their direct ownership as either a financial or complementary activity. In addition, the Federal Reserve did not provide any restructuring authority, because according to the Federal Reserve, JPMorgan never submitted a formal application requesting it.[2174] According to JPMorgan, the Federal Reserve did not want JPMorgan managing power plants, which the restructuring authority would have necessitated, so it dropped the effort.[2175]

Switch to Merchant Banking Authority. On February 23, 2011, JPMorgan notified the Federal Reserve that, rather than rely on complementary authority for the three power plants it owned outright, JPMorgan intended to assert merchant banking authority to continue owning them.[2176] A March 2011 internal Federal Reserve examination document stated that JPMorgan had taken the new stance, "because they believe [the Federal Reserve Board of Governors] staff is not inclined to consider financial restructuring of power plants to be a complementary activity."[2177] This document suggests that JPMorgan's assertion of merchant banking authority was a direct response to, as well as

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[2169] 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580.
[2170] Id.
[2171] Id. at 575. The Federal Reserve told the Subcommittee that JPMorgan did not formally request authority to enter into long-term electricity supply contracts, because it viewed its 2005 complementary order as already providing it; the Federal Reserve explained that the June 30 letter clarified that JPMorgan did have that authority. Subcommittee briefing by the Federal Reserve (10/16/2014).
[2172] 6/30/2010 letter from the Federal Reserve to JPMorgan, at FRB-PSI-302571- 580, at 574 - 575.
[2173] Id. at 573.
[2174] 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002.
[2175] Subcommittee briefing by JPMorgan (4/23/2014).
[2176] See 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304601 - 604 [sealed exhibit]. See also undated document, prepared by JPMorgan for the Federal Reserve, FRB-PSI-300352 - 353 (describing how JPMorgan planned to move from engaging in plant restructuring to merchant banking with respect to the affected power plants); Subcommittee briefing by JPMorgan (4/23/14).
[2177] 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit].

an effort to circumvent, the Federal Reserve's decision not to permit direct ownership of power plants as a complementary activity. JPMorgan told the Subcommittee that its assertion of merchant banking authority was permissible, because it was not running any of the three power plants directly, but was relying on third parties to operate them.[2178]

After noting JPMorgan's revised justification for its ongoing direct ownership of the power plants, the 2011 Federal Reserve examination document noted that JPMorgan had indicated that it intended to divest itself of all three power plants.[2179] As of 2014, however, more than three years after making that representation to the Federal Reserve, JPMorgan still retains possession of all three.

Of those three plants, JPMorgan acquired its ownership interest in the Central Power & Lime plant in Florida in 2008, as part of the Bear Energy acquisition.[2180] In the case of the Panda Brandywine plant in Maryland, JPMorgan acquired its shares as part of the RBS Sempra acquisition in July 2010, leased the plant back to the same owners to run, and then entered into a tolling agreement with the leaseholders.[2181] With respect to the Kinder Jackson plant in Michigan, JPMorgan originally held a tolling agreement with the plant, but when it became available for sale in September 2010, JPMorgan purchased it outright from the owners.[2182] JPMorgan took each of these actions without having authority to take direct ownership of a commercial enterprise like a power plant; it bought the latter two plants while awaiting a response to its request for appropriate complementary authority. Its ownership of the three power plants has now extended from four to six years.

A Federal Reserve examination document expressed frustration with JPMorgan's stance. It stated: "JPM has pressed on the boundaries of permissible activities including integrating merchant banking investments into trading activities and pursuing activity that may appear 'commercial in nature,' as well as pushed regulatory limits and their interpretation."[2183] With respect to JPMorgan's power plant activities, it stated:

> "JPMC holds power plants (Panda Brandywine and Kinder Morgan/Jackson) under a combination of authorities. FRB has previously indicated to the firm this is impermissible and is [in] discussion with the firm about conforming or divesting of these activities."[2184]

JPMorgan told the Subcommittee, and the Federal Reserve confirmed, that the Federal Reserve has never explicitly determined that JPMorgan lacked merchant banking authority to own the three power plants.[2185] JPMorgan explained that, prior to the Federal Reserve making that determination, JPMorgan informed the Federal Reserve that it was planning on selling all of its power plant holdings, which rendered the issue moot. As of October 2014, JPMorgan still has not completely divested itself of its ownership interests in the three power plants.

[2178] Subcommittee briefings by JPMorgan (4/23/2014 and 10/10/2014).
[2179] 3/3/2011 "Outstanding Issues," prepared by Federal Reserve examiners, FRB-PSI-304601 - 604, at 602 [sealed exhibit]; Subcommittee briefing by JPMorgan (10/10/2014).
[2180] JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025.
[2181] Id.
[2182] 8/13/2010 memorandum, "KJ Toll Disposition Plan," prepared by JPMorgan Commodity Principal Investment Team for the JPMorgan Commodities Principal Investment Committee, FRB-PSI-300066 - 093.
[2183] Undated but likely in the second half of 2013 examination document, "Commodities Focused Regulatory Work at JPM," prepared by the Federal Reserve, FRB-PSI-300299 - 302, at 299 [sealed exhibit].
[2184] Id. at 301.
[2185] Subcommittee briefing by JPMorgan (4/23/2014); email from the Federal Reserve to the Subcommittee (11/6/2014).

(c) Conducting Power Plant Activities

For six years, from 2008 to 2014, JPMorgan owned or controlled between 15 and 31 power plants across the country. In most cases, it held a long-term tolling agreement with the power plants. To carry out those tolling agreements, in most cases JPMorgan supplied the natural gas that fueled the plants and then took control of the plants' electricity output and sold it. JPMorgan used its wholly owned subsidiary, JPMorgan Ventures Energy Corporation (JPMVEC), to execute the vast majority of its electricity and natural gas trades supporting its power plant activities.[2186]

A large block of JPMorgan's power plants, 18 in all, were located in California. JPMorgan has sold some of those plants and currently holds a tolling agreement for 12, all of which are owned by AES Corporation (AES). The tolling agreement between JPMorgan and AES runs through 2018 at which time it will terminate.[2187] JPMorgan told the Subcommittee that it has re-tolled all 12 power plants to Southern California Edison,[2188] and has asked the plant owner, AES, to release it from the tolling agreement, but AES has declined, preferring to rely on JPMorgan's creditworthiness to ensure the tolling payments are made.[2189] For that reason, JPMorgan told the Subcommittee that it expects the tolling agreement to continue for the next four years until the termination date in 2018.[2190]

Regulatory Disputes. During the six years it has had control of the California power plants, JPMorgan has entered into multiple regulatory disputes with the California Independent System Operation Corporation (CAISO), California Public Utilities Commission (CPUC), and Federal Energy Regulatory Commission (FERC) over its power plant activities.

In one set of disputes, it battled state and federal regulators over the regulators' assertion that JPMorgan had made inaccurate statements and failed to provide requested information in an investigation into the pricing practices at some of its California plants during 2010 and 2011.[2191] To punish and deter that misconduct, FERC suspended for six months, from April to October 2013, JPMorgan's ability to sell electricity at market rates in California and elsewhere in the United States, costing it potentially millions of dollars.[2192] In a related regulatory dispute, described more fully below, in July 2013, JPMorgan paid $410 million to settle charges by FERC that some of its plants used improper bidding tactics that manipulated California and the Midwest's wholesale electricity

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[2186] See, e.g., JPM Notice Requesting Tolling Agreements, PSI-FederalReserve-02-000012 - 059, at 014, 018-019, 026.
[2187] Subcommittee briefing by JPMorgan (10/10/2014).
[2188] Id. See also 2/15/2013 Advice Letter No. 2853-E (U 338-E), filed by Southern California Edison with the Public Utilities Commission of the State of California, Energy Division, "Bilateral Capacity Sale and Tolling Agreement Between Southern California Edison Company and BE CA LLC" (seeking Commission approval of JPMorgan's re-tolling agreements with Southern California Edison).
[2189] Subcommittee briefing by JPMorgan (10/10/2014).
[2190] Id.
[2191] See, e.g., FERC v. J.P. Morgan Ventures Energy Corporation, Civil Case No. 1:2012-MC-00352-DAR (USDC DC), "Memorandum in Support for Petition by [FERC] for an Order to Show Cause Why this Court Should Not Enforce Subpoenas for Production of Documents" (7/2/2012).
[2192] See In re J.P. Morgan Ventures Energy Corporation, FERC Docket No. EL12-103-000, "Order Suspending Market-Based Rate Authority," (11/14/2012), 141 FERC ¶ 61,131. See also "JPMorgan's California energy dealings draw more fire," Los Angeles Times, Marc Lifsher (11/16/2012), http://articles.latimes.com/2012/nov/16/business/la-fi-jpmorganchase-power-20121116.

markets.[2193] JPMorgan's improper bidding tactics also caused CAISO and CPUC to make numerous rule and tariff changes to prevent similar practices in the future.

A third dispute involved an effort by CAISO to modify two power plants near Los Angeles, Huntington Beach 3 and 4, to increase electrical grid reliability.[2194] CAISO had entered into a contract with the owner of the plants, AES, to convert both plants into "synchronous condensers" that provide voltage support to move electricity through the grid and increase grid reliability.[2195] That contract was to take effect in January 2013, but JPMorgan claimed that, due to certain tolling and supplemental agreements it had with AES, CAISO had to obtain JPMorgan's consent to the plant modifications, which it declined to provide, even though both plants had been taken out of service.[2196] JPMorgan cited construction costs, harm to the economic value of its power plant investments, alternative solutions, and the unlikeliness of grid problems as reasons for not proceeding.[2197] CAISO eventually brought the dispute to FERC, which ruled that JPMorgan could not use its tolling agreement with AES to continue to block the proposed modifications to improve grid reliability.[2198]

In each of those three regulatory disputes, JPMorgan incurred substantial legal expense as well as ill will from regulators, utilities, wholesalers, and the California public.[2199]

Current Status. In addition to the 12 California power plants with which it has tolling agreements and re-tolled to Southern California Edison, JPMorgan still owns power plants in Michigan, Maryland, and Florida. JPMorgan told the Subcommittee that it has arranged for the sale of the Kinder Jackson plant in Michigan, but the transaction cannot take place for another year, until early 2016.[2200] JPMorgan indicated that the second plant, located in Florida, was converted by JPMorgan from a coal-fired plant to a biomass facility, is being run by an unrelated third party, and has been up for sale, but not yet sold. According to JPMorgan, the third plant, Panda Brandywine, located in Maryland, is run by a JPMorgan subsidiary, KMC Thermo, and is also up for sale.[2201]

JPMorgan told the Subcommittee that it intends to exit the power plant business.[2202] Despite that intent, JPMorgan expects to continue in the tolling agreement for the 12 California power plants for the next four years, plants to hold the Michigan plant for another year, and is uncertain when it will be able to sell the Florida and Maryland plants.

[2193] See Order Approving Stipulation and Consent Agreement; "JP Morgan to pay $410m in penalties for manipulating electricity prices," Associated Press (7/30/2013). http://www.theguardian.com/business/2013/jul/30/jpmorgan-ferc-penalty-energy-prices.

[2194] See In Re California Independent System Operator Corporation, FERC Docket No. EL13-21-000, FERC "Order on Petition for Declaratory Order" (1/4/2013), 142 FERC ¶ 61,016. See also "JPMorgan reduces presence in California power market, Reuters. Scott DiSavino (5/10/2013), http://articles.chicagotribune.com/2013-05-10/news/sns-rt-utilities-jpmorganedisoninternational-update-20130510_1_aes-corp-southern-california-edison-ferc.

[2195] See In Re California Independent System Operator Corporation, FERC Docket No. EL13-21-000, FERC "Order on Petition for Declaratory Order" (1/4/2013), 142 FERC ¶ 61,016, at 1-3.

[2196] Id. at 3-4.

[2197] Id. at 10, 12.

[2198] Id. at 20. JPMorgan appealed FERC's decision, but later re-tolled its California power plants to Southern California Edison, including its consent rights for the Huntington Beach power plants. It then dropped the litigation.

[2199] See, e.g., "State's power-plant fight with JPMorgan Chase is a legacy of deregulation mess," Sacramento Bee, Dale Kasler (12/10/2012), http://www.mcclatchydc.com/2012/12/10/176938/californias-power-plant-fight.html.

[2200] Subcommittee briefing by JPMorgan (10/10/2014).

[2201] JPMorgan Power Plant Chart, JPM-COMM-PSI-000022 - 025, at 025.

[2202] Subcommittee briefing by JPMorgan (4/23/2014).

(3) Issues Raised by JPMorgan's Involvement with Electricity

JPMorgan's power plant activities raise multiple concerns. First and foremost are concerns that JPMorgan used some of its power plants to engage in a manipulative scheme to receive excessive payments for electricity from Independent Systems Operators in California and Michigan. Additional issues include JPMorgan's allocating insufficient capital and insurance to protect against catastrophic event risks, and the Federal Reserve's failure to impose adequate safeguards to prevent misconduct and protect taxpayers.

(a) Manipulating Electricity Prices

The most important issue illustrated by JPMorgan's power plant activities is how physical commodity activities can involve a financial holding company in price and market manipulation misconduct, leading to consumers paying excessive electricity charges, violations of law, penalties, legal expenses, and reputational damage.

Overview of Price Manipulation. In July 2013, JPMorgan paid $410 million to settle charges brought by the Federal Energy Regulatory Commission (FERC) that it used multiple pricing schemes to manipulate electricity payments to the power plants it controlled in California and Michigan.[2203] JPMorgan admitted to an agreed set of facts, did not admit to violations of law, but agreed to disgorge "unjust profits" and pay a multi-million-dollar fine.[2204] The manipulative bidding practices that were the focus of the case were employed by JPMorgan's subsidiary, JPMorgan Ventures Energy Corporation (JPMVEC). The misconduct involved power plants in California and Michigan, from 2010 through 2012, in the electricity markets overseen by the California Independent System Operator (CAISO) and by the Midwest (now Midcontinent) Independent System Operator (MISO). The Enforcement staff of FERC found that between September 2010 and November 2012, JPMVEC engaged in 12 types of improper bidding strategies.[2205] In the process, FERC determined that JPMVEC violated the Commission's "Anti-Manipulation Rule" and employed fraudulent schemes that resulted in "a fraud on electricity market participants in CAISO and MISO."[2206]

FERC Enforcement alleged that JPMVEC exploited loopholes in the electricity pricing regulations in California and Michigan, and engaged in manipulative trading schemes "to make profits from power plants that were usually out of the money [i.e., unprofitable] in the marketplace."

[2203] See Order Approving Stipulation and Consent Agreement; 7/30/2013 FERC press release, "FERC, JP Morgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers," http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VEAgZ6PD9aR. The FERC Consent Agreement followed a filed claim in the U.S. District Court for the District of Columbia. FERC v. J.P. Morgan Ventures Energy Corporation, Civil Case No. 1:2012-MC-00352-DAR (USDC DC 2012), "Memorandum in Support for Petition by [FERC] for an Order to Show Cause Why this Court Should Not Enforce Subpoenas for Production of Documents" (7/2/2012). See also "JP Morgan to Pay $410 million in U.S. settlement" Bloomberg, Brian Wingfield and Dawn Kopecki (7/30/2013), http://www.bloomberg.com/news/2013-07-30/jpmorgan-to-pay-410-million-in-u-s-ferc-settlement.html.

[2204] FERC Consent Agreement, at 15-19.

[2205] 7/30/2013 FERC news release, "FERC, JPMorgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers," http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VC8CUKPD9aQ.

[2206] Id.: FERC Consent Agreement at 13-14. See also FERC Anti-Manipulation Rule, 18 C.F.R. §1c.2 (2012) (stating it is unlawful to fraudulently manipulate the energy market).

FERC also alleged that JPMVEC's bidding strategies were "designed to create artificial conditions that forced the regulators to pay JPMVEC above the market at premium rates."[2207]

To turn its usually unprofitable power plants into profitable ones, JPMVEC traders submitted electronic bids that were calculated to falsely appear to be attractive to the bidding software used by California and Michigan electricity authorities, but were designed to result in above-market rate payments. To initiate the bidding scheme, JPMVEC's traders submitted bids that offered to sell electricity at rates well below JPMVEC's cost in generating the electricity, which meant the offers usually lost money, if accepted. JPMVEC was willing to make those artificially low offers, which were really nothing more than loss leaders, so that it could then participate in CAISO's and MISO's "make-whole" payment mechanisms.[2208] Those mechanisms allow CAISO and MISO to compensate generators at above-market prices to provide an incentive for plant owners to participate in the bidding auctions and ensure grid reliability. JPMVEC used the make-whole payments in connection with its bidding strategies to more than make up for the money it lost at market rates, frequently receiving, in the end, twice its costs plus the same market payments that other market participants received, without adding any grid reliability benefits.[2209]

JPMVEC's bidding schemes caused California and Michigan electricity authorities to pay approximately $124 million in "excessive" payments to JPMorgan.[2210] When CAISO and MISO officials realized what JPMVEC was doing, they objected and asked JPMVEC to stop. According to FERC, JPMVEC continued creating new bidding schemes more than a year after it had been notified it was under investigation – even as CAISO and MISO were re-writing the bidding rules to address the prior schemes.[2211] For example, after CAISO shut down one bidding scheme in April 2011, JPMorgan began two new schemes that led to another CAISO intervention in June 2011 to halt them as well.[2212]

Power Plants Involved with the Bidding. JPMVEC used several power plants in its bidding schemes. Most prominent were a set of power plants, located in California, which were owned by the AES Corporation (AES) and were part of the Bear Energy acquisition in 2008.[2213] JPMVEC also used the Kinder Jackson power plant in Michigan, another plant acquired through the 2008 Bear Energy acquisition. In each case, JPMorgan, through its subsidiary, JPMVEC, had acquired Bear Stearns' long-term tolling agreement with the plant.[2214] The tolling agreements gave JPMVEC the right to sell the plants' electricity output and keep the profits from the sales.[2215]

[2207] 7/30/2012 FERC news release, "FERC, JPMorgan Unit Agree to $410 Million in Penalties, Disgorgement to Ratepayers," http://www.ferc.gov/media/news-releases/2013/2013-3/07-30-13.asp#.VC8CUKPD9aQ.
[2208] In the CAISO system, make-whole payments are called "Bid Cost Recovery" or "BCR" payments. MISO has several different types of make-whole payments.
[2209] FERC Consent Agreement, at 11-13.
[2210] Id. at 15.
[2211] Order Approving Stipulation and Consent Agreement, at 2, 5 (indicating that the FERC investigation began in August 2011, but that JPMVEC continued implementing new bidding strategies until November 2012).
[2212] FERC Consent Agreement, at 10.
[2213] Id. at 1.
[2214] Id.
[2215] Id.

When JPMVEC first acquired the tolling agreement involving the AES power plants in California, all of the tolling rights had been subleased to Southern California Edison.[2216] Starting in 2011, as the subleased tolling agreements began to expire, JPMVEC began to re-gain control of the plants. On January 1, 2011, JPMVEC re-gained control of four power plants. By January 1, 2012, JPMVEC had re-gained control of six more.[2217] In addition, in a separate transaction in January 2010, JPMVEC acquired from the plant owner, AES, short-term tolling rights with two additional California power plants, Huntington Beach 3 and 4, which JPMorgan took on to gain experience in the California market.[2218]

Development of Bidding Strategies. According to FERC, the bidding strategies at issue were developed by JPMVEC personnel based in a JPMorgan office in Houston.[2219] The Houston office was run by Francis Dunleavy, who reported directly to Blythe Masters, the head of JPMorgan's Global Commodities Group.[2220] At the time the bidding schemes were developed, JPMVEC's California and Michigan plants could not compete profitably with other electricity plants in the CAISO and MISO markets.[2221] According to FERC, "[Blythe] Masters kept close tabs on the California and Michigan plants, in part, because she viewed the AES … plants as 'our largest risk position.'"[2222] JPMorgan's senior management expected Mr. Dunleavy to find a way to make the California and Michigan plants profitable and to generate an "'appropriate return' which meant a 17% return on equity."[2223] In 2010, after JPMorgan took over the Huntington Beach 3 and 4 power plants, it began pursing ways for them to become more profitable.

In 2010, JPMVEC hired a new employee who would become a key designer of its improper bidding strategies. On April 29, 2010, the resume of John Bartholomew made its way to the attention of Mr. Dunleavy.[2224] Mr. Bartholomew was then employed at Southern California Edison and had previously interned at FERC.[2225] On his resume, he stated that he had identified a "flaw in the market mechanism … causing CAISO to misallocate millions of dollars."[2226] Mr. Bartholomew indicated that it was possible to profit by gaming the system, rather than selling electricity at a profit at market

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[2216] Id. at 2.
[2217] Id.
[2218] Id. at 3.
[2219] 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 117 [sealed exhibit].
[2220] Id. See also 3/14/2011 email exchange between Francis Dunleavy, JPMorgan, and Blythe Masters, JPMorgan, "Privileged and Confidential – CAISO update," PSI-FERC-02-000067 (showing Mr. Dunleavy discussing the CAISO matter with Ms. Masters).
[2221] 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 117-119 [sealed exhibit].
[2222] Id. at 118.
[2223] Id. at 119.
[2224] See 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, "Resume for Power," PSI-FERC-02-000009 - 010, at 009.
[2225] Id.
[2226] 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 120 [sealed exhibit]. The Bartholomew resume stated: "Identified flaw in the market mechanism Bid Cost Recovery that is causing the CAISO to misallocate millions of dollars." 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, "Resume for Power," PSI-FERC-02-000009 - 010, at 009.

rates.[2227] In a matter of hours after Mr. Bartholomew sent his resume to the Houston office, Mr. Dunleavy instructed others to "get him in ASAP."[2228] Mr. Bartholomew began working at JPMVEC in July 2010.[2229]

Shortly after starting, Mr. Bartholomew began to develop manipulative bidding strategies focused on CAISO's make-whole mechanism, called Bid Cost Recovery or BCR payments. The strategies were designed to cause CAISO and MISO to make payments at premium prices above the market rates, and produce millions of dollars in profits for JPMorgan.[2230]

Regional Electricity Markets. To understand the bidding strategies, some background on the CAISO and MISO electricity markets is necessary. CAISO and MISO are Independent System Operators (ISOs) that operate regional wholesale markets for electricity, and are regulated by FERC.[2231] In their wholesale electricity markets, the sellers – who are generally power plants or parties like JPMVEC who control power plant output – and the buyers – who are generally distributors that provide electricity to retail customers – submit bid and offer prices at which they are willing to transact.[2232] CAISO and MISO both operate "Day Ahead" and Real Time" regional markets for physical electricity.[2233] As explained earlier, the Day Ahead market is a forward market that allows participants buy and sell one day ahead of the date on which the electricity is actually delivered; the Real Time market operates on the day the electricity is transmitted.[2234] In general, CAISO and MISO provide the power seller with an "award" if the ISO agrees to buy electricity from the seller.[2235] Even if a seller receives an ISO Day Ahead "award," it may not produce all of the energy called for in the award.[2236] If the ISO does not, in the end, instruct the generator to produce all of the energy specified in the award, the generator can "buy back" the unneeded portion of the award in the Real Time market.[2237]

Because of this system, in the Real Time market, some sellers/power generators become potential buyers of electricity in the Day Ahead market.[2238] If a generator receives an award in the Day Ahead market and then buys back a portion of the award in the Real Time market, the generator is said to be receiving a 'decremental' or reduced energy award.

[2227] See 4/29/2010 email exchange between Francis Dunleavy, JPMorgan, and Rob Cauthen, JPMorgan, "Resume for Power," PSI-FERC-02-000009 - 010, at 009.
[2228] Id.
[2229] FERC Consent Agreement, at 2.
[2230] 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 120 [sealed exhibit].
[2231] FERC Consent Agreement, at 3.
[2232] Id.
[2233] Id.
[2234] Id. at 4 (explaining that due to the two different markets, the prices from each exchange for the same hour may differ). See also "Energy Primer: A Handbook of Energy Market Basics," Staff report of the Division of Energy Market Oversight, Office of Enforcement, Federal Energy Regulatory Commission (7/2012), at 65, http://www.ferc.gov/market-oversight/guide/energy-primer.pdf (describing the markets generally).
[2235] FERC Consent Agreement, at 4.
[2236] Id.
[2237] Id.
[2238] Id. at 5.

Payments to Generators. ISOs such as CAISO and MISO pay power generators for electricity. When CAISO and MISO pay power generators, they ordinarily do so at market rates.[2239] As noted above, in certain circumstances, they also pay power generators "make-whole" payments under applicable market rules designed to ensure grid reliability.[2240] Under CAISO's BCR mechanism, CAISO generally guarantees payments to cover a plant's costs for starting up and running its plants at the lowest level – called "minimum load" – if the plant gets a Day Ahead award, even if the plant later buys back in the Real Time market the entire portion of the award above its minimum load. The BCR payments, again, provide an incentive for power sellers to participate in electricity markets and increase grid reliability. BCR payments "provide additional compensation to generators when market revenues are insufficient to cover the 'bid cost' of a resource the ISO has committed."[2241] In the CAISO system, the BCR rules allow bidders to be paid up to twice their real costs for running a minimum load, which can result in electricity customers paying excessive electricity charges.

JPMVEC Manipulation. According to the stipulated facts, on September 8, 2010, JPMVEC began to implement one of its bidding strategies in the CAISO market.[2242] The strategy had been developed by Mr. Dunleavy, Mr. Bartholomew, and Andrew Kittell in JPMorgan's Houston office. The strategy was used in connection with the Huntington Beach 3 and 4 plants and, eventually, other AES plants as JPMVEC regained control of them.[2243] As part of the strategy, in the Day Ahead market, JPMVEC submitted the lowest bid allowed under CAISO rate schedules.[2244] The bid was generally at the rate of -$30 per megawatt hour, which meant that JPMVEC was offering a negative bid and was willing to pay the buyer to take the electricity, despite the costs involved in producing it.[2245] Its bids were reviewed by electronic software, which did not grasp the intent behind JPMVEC's below-cost bids. JPMVEC's -$30 bids were well below where the Day Ahead Market actually settled, which was typically in the positive range of $30 - $35 per megawatt hour, so the bids routinely secured Day Ahead awards from CAISO.[2246] JPMVEC was then given a Day Ahead award at the prevailing market price regardless of its initial low bid price.[2247] In addition, its traders knew that if JPMVEC won a Day Ahead award, JPMVEC could also qualify for a BCR payment on its minimum load equal to twice its costs, resulting in a total payment well in excess of market prices.[2248]

To obtain the BCR payment, the bidding strategy required JPMVEC to place a followup bid in the Real Time market. On the days that it received Day Ahead awards, JPMVEC submitted followup bids in the Real Time market, generally above the market price by only a small amount to

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[2239] Id.
[2240] Id.
[2241] Id. "Bid cost" refers to the price the power generating unit has submitted to the ISO.
[2242] Id. at 6.
[2243] Id. at 5-6.
[2244] Id. at 6. CAISO's rate schedules are often referred to as the "tariff." See "Help – Glossary," FERC website (8/20/2013), http://www.ferc.gov/help/glossary.asp#T (defining "tariff" as "[a] compilation of all effective rate schedules of a particular company or utility. Tariffs include General Terms and Conditions along with a copy of each form of service agreement").
[2245] FERC Consent Agreement, at 7. Sellers can have legitimate reasons to make a negative bid, such as wind farms which may be entitled to tax credits greater than their negative bid.
[2246] Id.
[2247] Id.
[2248] 3/13/2013 report, "In Re Make-Whole Payments and Related Bidding Strategies," prepared by FERC Enforcement Staff, PSI-FERC-02-000113 - 182, at 123 [sealed exhibit].

ensure its bids were taken.[2249] In each bid, JPMVEC sought to reduce its award in the Day Ahead market to no more than its minimum load, which it knew would elicit a BCR payment. After the close of bids in the Real Time market, CAISO's electronic system generally provided a decremental electricity award to JPMVEC, reducing the actual amount of energy it was required to produce to its minimum load. For that minimum load amount, the software typically awarded JPMVEC a BCR payment equal to twice its costs for producing the electricity. In essence, JP Morgan sold high priced electricity to CAISO, received a BCR payment equal to twice its costs, and also received a payment at the prevailing marketplace price for the electricity provided – in effect, it was paid three times for the same electricity.

Unjust Profits. The result of the bidding strategy was an immediate increase in JPMVEC power plant revenues, which totaled several million dollars in just the first month.[2250] By the second month in October 2010, JPMVEC estimated that the bidding strategy could produce profits of between $1.5 and $2 billion through 2018.[2251] According to the stipulated facts, in the six-month period between September 8, 2010 and March 10, 2011, the two Huntington Beach power plants produced market revenues of $21.9 million, while accruing costs of $29.5 million, producing a loss of $7.6 million.[2252] During the same period, however, the two plants collected BCR payments totaling $34.6 million, resulting in an overall six-month profit of $27 million – from inefficient plants that usually could not compete successfully in the marketplace.[2253] As evidence of the success of this strategy, in the midst of that stretch, a JPMVEC employee sent an email to several colleagues with an image of Oliver Twist extending a bowl and the subject line: "Please sir! mor BCR!!!!"[2254]

In addition to this scheme, which was its most profitable, FERC Enforcement found that JPMVEC engaged in 11 other manipulative bidding strategies from September 2010 through November 2012, in both the CAISO and MISO markets. FERC officials told the Subcommittee that in the years since Congress gave FERC enhanced anti-manipulation authority in the Energy Policy Act of 2005, the CAISO and MISO regulators had never before witnessed the degree of blatant rule manipulation and gaming strategies that JPMorgan used to win electricity awards and elicit make-whole payments.[2255]

Penalties. To settle the manipulation charges, JPMorgan agreed to disgorge $124 million in "unjust profits" to CAISO to be allocated for the benefit of current CAISO ratepayers; $1 million in "unjust profits" to MISO for the benefit of current MISO ratepayers; and a civil penalty of $285 million to the United States Treasury.[2256]

Other Financial Institutions. JPMorgan is not the only financial holding company that has been charged with manipulating electricity prices. In July 2013, FERC issued an order assessing civil

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[2249] FERC Consent Agreement, at 7.
[2250] Id. at 6.
[2251] Id.
[2252] Id. at 7-8.
[2253] Id.
[2254] 11/22/2010 email from Luis Davila, JPMorgan, to John Rasmussen and Ryan Martin, JPMorgan, "Please sir! mor BCR!!!!," PSI-FERC-02-000042. The image of Oliver Twist in the body of the email can be viewed at this website: http://sb.westfordk12.us/pages/8gweb/8gla/charweb/4/04OliverTwist/gruel.jpg.
[2255] Subcommittee briefing by FERC (7/11/2013).
[2256] FERC Stipulation and Consent Agreement, at 15 - 19.

penalties against Barclays and its traders for manipulating electricity prices in California from 2006 to 2008, directing it to pay compensatory damages, interest and penalties totaling $435 million.[2257] Specifically, FERC found that Barclays and its traders manipulated "prices on 655 product days over 35 product months in the ... regulated physical markets at the four most liquid trading points in the western United States."[2258] According to FERC, Barclays and its traders carried out this scheme "by building substantial monthly physical index positions in the opposite direction of the financial swap positions they assembled at the same points ...."[2259] By building physical positions in the index, Barclays was able to move the index price so that its financial swap positions would benefit.[2260] FERC found that Barclays' trading in physical index positions "was 'not intended to get the best price on those trades' and was 'not responding to supply and demand fundamentals,' but instead was intended to 'benefit' Barclays' related Financial Swap positions."[2261] Barclays is contesting both the charges and penalty.

In addition, in January 2013, Deutsche Bank agreed to pay $1.6 million to settle FERC charges that it manipulated electricity markets in California in 2010.[2262] FERC alleged that the manipulation involved using physical positions to benefit derivative positions in financial markets.[2263]

Together, the JPMorgan, Barclays and Deutsche Bank cases demonstrate a variety of ways in which financial holding companies have taken advantage of their power plant activities to manipulate electricity prices to their benefit. They also demonstrate the critical importance of regulatory oversight and enforcement to stop unfair practices.

(b) Allocating Insufficient Capital and Insurance to Cover Potential Losses

A completely different set of issues raised by JPMorgan's power plant activities involves its exposure to the catastrophic event risks associated with commercial industrial ventures. Power plants are large industrial complexes subject to a wide range of catastrophic event risks. Many are powered with natural gas, which is flammable and explosive. Over a two-year period, JPMorgan gained exposure to 31 natural gas and coal-fueled power plants across the country, at a time when it knew

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[2257] FERC v. Barclays Bank PLC, Docket No. IN08-8-000. Order Assessing Civil Penalties. 144 FERC ¶ 61,041 (7/16/2013). The CFTC has also charged hedge funds with market manipulation, demonstrating that financial firms have the means to manipulate commodity futures and swap prices. See, e.g., CFTC v. Amaranth Advisors, LLC. Case No. 07-CV-6682 (DC) (USDC SDNY)(7/25/2007); 8/12/2013 CFTC press release, "Amaranth Entities Ordered to Pay a $7.5 Million Civil Fine in CFTC Action Alleging Attempted Manipulation of Natural Gas Futures Prices," (describing how, in 2009, the CFTC collected $7.5 million in fines from a hedge fund. Amaranth Advisors LLC, and its Canadian subsidiary for attempted manipulation of natural gas futures prices in 2006); CFTC v. Moncada, Case No. 09-CV-8791 (USDC SDNY)(12/4/2012)(describing how, in 2012, the CFTC charged two related hedge funds, BES Capital LLC and Serdika LLC, with attempted manipulation of wheat futures prices in 2009; they are contesting the charges).

[2258] FERC v. Barclays Bank PLC, Docket No. IN08-8-000, Order Assessing Civil Penalties, 144 FERC ¶ 61,041, at 3 (7/16/2013).

[2259] Id.

[2260] Id.

[2261] Id. at 4.

[2262] See In re Deutsche Bank Energy Trading, LLC, FERC Case No. IN12-4-000, "Order Approving Stipulation and Consent Agreement," (1/22/2013), 142 FERC ¶ 61,056, http://www.ferc.gov/EventCalendar/Files/20130122124910-IN12-4-000.pdf.

[2262] 1/22/2013 FERC news release, "FERC Approves Market Manipulation Settlement with Deutsche Bank," http://www.ferc.gov/media/news-releases/2013/2013-1/01-22-13.asp

[2263] Id.

virtually nothing about the business. Federal Reserve examiners found that JPMorgan did not have the technical, operations or engineering capability to review the power plants' compliance with regulatory standards, and the Federal Reserve Commodities Team found that JPMorgan's capital and insurance levels were insufficient to protect it against potential losses from a catastrophic event.

Placing accurate values on power plants, tolling agreements, and related assets are critical to financial holding companies allocating adequate capital and insurance to cover potential losses. The 2012 Summary Report prepared by the Federal Reserve Commodities Team warned, however, that the valuation techniques being used by financial holding companies for their physical commodity activities were not consistent, comprehensive, or reliable. The 2012 Summary Report looked in particular at how financial holding companies were valuing power plants. It determined that most held the plants on their books as an investment at cost, and used tolling agreements to capture the ongoing economic value. Tolling agreements typically capture the value of the difference between a plant's fuel inputs (coal or gas) and its output (electricity). The 2012 Summary Report determined that, while that approach provided a liquid derivative representation of an illiquid, hard-to-value asset, it also had weaknesses that would not be reflected in stress tests.[2264] It pointed out, for example, that depending upon how a tolling agreement was worded, a financial holding company might have to make payments to buy output from a power plant that wasn't producing any power, or have to buy all of the production of a facility whose output is no longer valuable, expenses that might not be disclosed in a typical stress test.

In addition, the 2012 Summary Report found that the insurance coverage at the financial holding companies appeared to be insufficient. It noted that "[p]hysical commodities is a notoriously fat-tailed business with [the] insurer only covering limited losses for some risks."[2265] The 2012 Summary Report found that "[i]n all cases ... insurance for ... catastrophic events is capped at a certain level (typically US $1 billion) and firms cannot cover any amount beyond the cap through insurance."[2266] It also noted that the financial holding companies used "aggressive assumptions" to minimize estimated losses from a catastrophic event.[2267] In the 2010 Deepwater Horizon oil spill case, BP had reportedly self-insured for up to $700 million,[2268] but projections now place its liability at $42 billion, with another possible $18 billion in fines, almost 85 times greater than what BP had self-insured for.

With respect to JPMorgan, the 2012 Summary Report stated that JPMorgan had determined that the "operational and event risks of owning power facilities" were capped at the dollar value of those facilities in the event of their total loss, with some insurance to cover "the death and disability of workers" and some facility replacement costs, but leaving all other expenses, including a "failure to deliver electricity under contract," to be paid by the holding company.[2269] At another point, the

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[2264] 10/3/2012 report, "Physical Commodity Activities at SIFIs," prepared by Federal Reserve Bank of New York Commodities Team (hereinafter, "2012 Summary Report"), FRB-PSI-200477 - 510, at 482 [sealed exhibit].
[2265] Id. at 509. See also id. at 500 (noting that insurance companies "do not have comfortable ways to assess the rail risk and thus avoid insuring the tails" for catastrophic events, such as multi-billion dollar oil spills).
[2266] Id. at 491.
[2267] Id. at 493 - 494.
[2268] See "BP Oil Spill Damages to Stretch Insurance Coverage," Oilprice.com, Gloria Gonzalez (8/2/2010), http://oilprice.com/The-Environment/Oil-Spills/BP-Oil-Spill-Damages-To-Stretch-Insurance-Coverage.html.
[2269] 2012 Summary Report, at FRB-PSI-200477 – 510, at 494 [sealed exhibit]. See also 5/18/2011 presentation, "Commodities Operational Risk Capital," prepared by JPMorgan, FRB-PSI-300727 - 736, at 729.

2012 Summary Report prepared a chart comparing the level of capital and insurance coverage at four financial holding companies, including JPMorgan, against estimated costs associated with "extreme loss scenarios." It found that at each institution, including JPMorgan, "the potential loss exceed[ed] capital and insurance" by $1 billion to $15 billion.[2270]

Still another problem involves JPMorgan's direct ownership of three power plants. Although JPMorgan has contracted with third parties to operate those plants, it still owns 100% of their shares. U.S. federal law attaches liability for catastrophic environmental events to both owners and operators. By choosing to become the direct owner of the three power plants, instead of holding tolling agreements with them as permitted under its complementary authority, JPMorgan has increased the financial holding company's liability for damages, should disaster strike.

Even well–run power plants carry catastrophic event risks. If the worst case scenario should occur, JPMorgan should be prepared to cover the potential losses, without U.S. taxpayer assistance.

(c) Erecting Inadequate Safeguards

A final set of issues involves the absence of effective regulatory safeguards and enforcement related to financial holding company involvement with power plants. One key regulatory gap is the Federal Reserve's lack of procedures to handle market manipulation problems. Because banks have a limited history of involvement with physical commodities, and market manipulation violations are typically detected and enforced by non-banking regulators such as the CFTC, SEC, or FERC, the Federal Reserve has few mechanisms in place to educate or alert examiners to signs of market manipulation. At the same time, the 2012 Summary Report warned that virtually every financial holding company it examined had been "accused or charged" with "manipulating markets."[2271] Those charges can lead to violations of law, reimbursement of excessive consumer electricity bills, multi-million-dollar fines, and reputational damage. Regulatory safeguards should be erected to ensure bank examiners act against improper practices by establishing examination procedures, implementing preventative measures, and strengthening coordination with enforcement agencies.

A second problem exposed by JPMorgan's power plant activities is how financial holding companies are permitted to retain and profit from the impermissible holding of physical commodity assets for years at a time. JPMorgan had no legal authority to directly own a power plant, yet it acquired one in 2008, and two more in 2010, and still has them years later. When JPMorgan's application for complementary authority to own those plants was turned down, it asserted its merchant banking authority to keep them. At the same time, knowing of the Federal Reserve's concern about its direct ownership of a commercial enterprise like a power plant, JPMorgan promised to exit the power plant business, but plans to take years to do so. JPMorgan told the Subcommittee that its tolling agreement for 12 California power plants will take another four years to finish, its planned sale of a Michigan plant is on hold for another year, and its attempts to locate buyers for two other power plants are moving slowly. Despite the passage of years and multiple warnings about directly owning the power plants, and the increased liability attached to direct ownership, the Federal

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[2270] 2012 Summary Report, at FRB-PSI-200477 – 510, at 498, 509 [sealed exhibit]. The 2012 Summary Report also noted that commercial firms engaged in oil and gas businesses had a capital ratio of 42%, while bank holding company subsidiaries had a capital ratio of, on average, 8% to 10%. Id. at 499.

[2271] Id. at 492.

Reserve has yet to force JPMorgan to divest itself of those assets. More broadly, the Federal Reserve appears to have a track record of repeatedly extending deadlines for the sale of impermissible assets, in the end allowing banks to retain them for multiple years. Today, safeguards to ensure the sale of impermissible physical commodity assets appear dysfunctional, with little certainty to protect U.S. taxpayers at risk when financial holding companies ignore the restrictions on their activities.

(4) Analysis

When the Subcommittee investigation examined financial holding company involvement with electricity, it found multiple levels of involvement affecting power generation in the United States and around the world. All three financial holding companies examined by the Subcommittee traded electricity, had tolling agreements or ownership interests in power plants around the world, supplied fuel to power plants, and engaged in some form of power plant energy management. Their power plant activities ranged widely, from capturing the energy output of alternative energy plants using wind, solar, hydropower, and other energy sources; to installing residential rooftop solar systems; to building wind farms; to becoming the primary supplier of coal, natural gas, or uranium to multiple utilities. Power plant activities are fraught with market manipulation issues, operational and catastrophic event risks, and impermissible commercial activities. It is past time for the Federal Reserve to impose needed safeguards to limit financial holding company involvement with this high risk physical commodity activity.

C. JPMorgan Involvement with Copper

For many years, JPMorgan has engaged in a wide range of physical copper activities. Because federal bank regulators currently treat copper as "bullion," equivalent to gold or silver, JPMorgan has been permitted to accumulate copper holdings without the normal size limits that apply to other metals and has amassed, at times, copper inventories exceeding $2 billion. JPMorgan has also participated in copper-related physical and financial trading, and proposed a copper-backed exchange traded fund that some industrial copper users allege raises conflict of interest and market manipulation concerns.

(1) Background on Copper

Copper is a naturally occurring metal which, due to its "high ductility, malleability, and thermal and electrical conductivity, and its resistance to corrosion," has become "a major industrial metal, ranking third after iron and aluminum in terms of quantities consumed."[2272] Copper is widely used in the electrical, construction, and electronics industries,[2273] which together comprise approximately 56% of global industrial copper consumption.[2274] It is also important to the defense industry, transportation, and industrial machinery.[2275]

When mined, copper is produced as part of a mixture of materials that usually includes iron and sulfur.[2276] Producing pure copper metal requires a multistage process which typically includes concentrating the copper found in low-grade ore; smelting – heating and chemically treating – the ore to extract the copper; and then applying electrolytic refining to produce a "copper cathode," meaning copper material with a purity of 99.95%.[2277] Another way copper can be purified is through the "acid leaching of oxidized ores."[2278] Copper recycling contributes a significant share of copper supply worldwide.[2279]

Most of the world's copper comes from Chile, whose mines produced 5.7 million metric tons of copper in 2013.[2280] The next largest copper producers are China, with 1.7 million metric tons in 2013; Peru with 1.3 million metric tons, and the United States with 1.2 million metric

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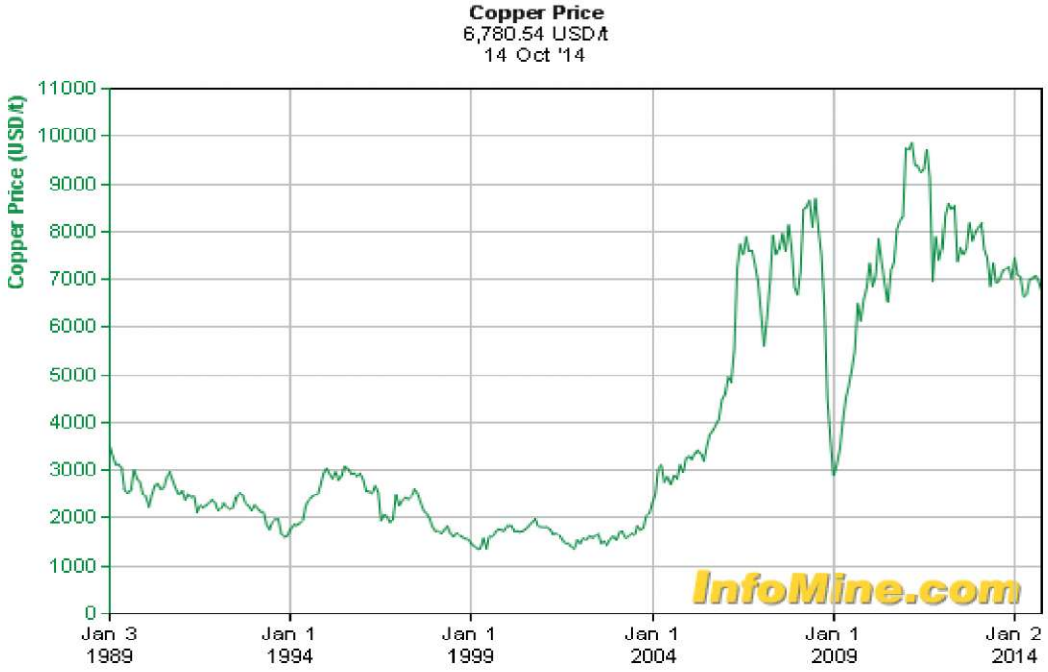
[2272] Undated "Copper Statistics and Information." U.S. Geologic Survey website, http://minerals.usgs.gov/minerals/pubs/commodity/copper/.
[2273] See Form S-1 Registration Statement. JPM XF Physical Copper Trust, Amendment No. 8 (4/5/2013). at 33. Securities and Exchange Commission (SEC) website, http://www.sec.gov/Archives/edgar/data/1278680/000119312505011426/ds1a.txt.
[2274] See 9/19/2014 "Production and Consumption," LME website, http://www.lme.com/metals/non-ferrous/copper/ http://www.lme.com/en-gb/metals/non-ferrous/copper/production-and-consumption/.
[2275] See undated "Copper Statistics and Information," U.S. Geologic Survey website, http://minerals.usgs.gov/minerals/pubs/commodity/copper/.
[2276] See undated "What is a Copper Cathode?" http://www.wisegeek.com/what-is-a-copper-cathode.htm.
[2277] See undated "Copper Statistics and Information," U.S. Geologic Survey website, http://minerals.usgs.gov/minerals/pubs/commodity/copper/; undated "What is a Copper Cathode?" http://www.wisegeek.com/what-is-a-copper-cathode.htm.
[2278] Undated "Copper Statistics and Information," U.S. Geologic Survey website, http://minerals.usgs.gov/minerals/pubs/commodity/copper/.
[2279] Id.
[2280] See 2/2014 "U.S. Geological Survey, Mineral Commodity Summaries," U.S. Geological Survey website, at 48-49, http://minerals.usgs.gov/minerals/pubs/mcs/2014/mcs2014.pdf.

tons.[2281] In 2013, U.S. production accounted for about 7% of global annual copper production.[2282] Despite rising copper prices, copper mines have increased production only modestly, due in part to declining extractions from old mines and delays in new mining projects.[2283]

In the physical markets, according to copper manufacturers, about 85% of the copper produced annually is sold via long-term supply contracts.[2284] Those contracts typically specify the amount of copper to be delivered on specific dates, at prices linked to benchmark copper prices that vary over time.[2285] The most common benchmark price is the copper futures price established on the London Metal Exchange (LME), the largest financial market for metals. Physical contracts also typically specify a "locational premium," reflecting storage and transportation expenses associated with providing copper at a specified location.[2286] Collectively, the benchmark price and locational premium typically comprise the "all-in" price for copper.

Copper Prices. Over the last decade, copper prices have experienced significant volatility, including "unpredictable" fluctuations,[2287] creating price risks for producers and end users.[2288] As shown in the chart below, prices per metric ton fell from $8,500 in 2008, to under $3,000 in 2009, and then spiked to over $10,000 in December 2010 and January 2011, reaching all-time highs. Over a three-month period from August through October 2014, copper prices fluctuated between $7,100 and $6,600 per metric ton, a difference of nearly 10%.[2289]

[2281] Id.
[2282] See 2/2014 "Mineral Commodity Summaries," U.S. Geological Survey website, at 48, http://minerals.usgs.gov/minerals/pubs/mcs/2014/mcs2014.pdf.
[2283] See 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 38, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm
[2284] See 7/18/2012 letter from Copper Manufacturers to SEC, "Re: File Number SR-NYSEArca-2-12-66 PSI-VandenbergFeliu_to_SEC(July2012)-000001-005, at 004-005.
[2285] Id.
[2286] See 4/16/2012 SEC "Notice of Filing of Proposed Rule Change to List and Trade Shares of the JPM XF Physical Copper Trust," Release No. 34-66816, File No. SR-NYSEArca-2012-28, at 13 (hereinafter "SEC Notice"), SEC website, http://www.sec.gov/rules/sro/nysearca/2012/34-66816.pdf.
[2287] 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 15, SEC website, http://www.nasdaq.com/markets/ipos/filing.ashx?filingid=8803483.
[2288] See 7/18/2012 letter from Copper Manufacturers to SEC, "Re: File Number SR-NYSEArca-2-12-66 PSI-VandenbergFeliu_to_SEC(July2012)-000001-005, at 004-005.
[2289] See undated "Historical price graph for Copper," LME website, https://www.lme.com/en-gb/metals/non-ferrous/copper/ (showing copper futures prices from August 1 to October 21, 2014).



Source: "Historical Copper Prices and Price Chart," InfoMine Inc. (10/14/2014), http://www.infomine.com/investment/metal-prices/copper/all/.

In the financial markets, copper can be traded through a variety of financial instruments, including futures, swaps, options, and forwards. The most active copper trading takes place on the LME.[2290] The LME identifies four categories of metals: "precious metals," which include gold and silver; "non-ferrous" or "base" metals, which include copper, aluminum, nickel, and zinc, among others; "steel billet," which includes steel, and "minor metals," which include cobalt and molybdenum.[2291] The LME provides multiple copper futures contracts for trading.[2292] The standardized LME futures contracts involve 25 metric tons of "Grade A Copper," and may be settled financially or by delivery of physical copper.[2293] In 2013, copper was among the most actively traded base metal futures on the LME.[2294] LME prices provide the global price benchmarks used in contracts around the world for the physical purchase or sale of copper.[2295]

[2290] See LME website, https://www.lme.com/ ("More than 80% of global non-ferrous business is conducted here and the prices discovered on our three trading platforms are used as the global benchmark.").

[2291] See undated "Metals," LME website, https://www.lme.com/en-gb/metals/. The LME is planning to add platinum, and palladium to its precious metals category by the end of 2014. See 10/16/2014 LME press release, "LME wins bid for provision of London Platinum and Palladium Prices," https://www.lme.com/news-and-events/press-releases/press-releases/2014/10/lme-wins-bid-for-provision-of-london-platinum-and-palladium-prices/.

[2292] See undated "Copper," LME website, https://www.lme.com/en-gb/metals/non-ferrous/copper/.

[2293] See undated "LME Copper physical specification," LME website, https://www.lme.com/metals/non-ferrous/copper/contract-specifications/physical/, and "2013 Trading Volumes," LME website, https://www.lme.com/metals/reports/monthly-volumes/annual/2013/.

[2294] See, e.g., "2013 Trading Volumes," LME website, https://www.lme.com/metals/reports/monthly-volumes/annual/2013/.

[2295] See LME website, https://www.lme.com/ ("More than 80% of global non-ferrous business is conducted here and the prices discovered on our three trading platforms are used as the global benchmark."); 1/17/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment, at 40.

Copper as Bullion. Although for more than 100 years, copper has been traded on world markets and in the United States as a base metal with industrial uses,[2296] both the Federal Reserve and the U.S. Office of the Comptroller of the Currency (OCC) currently classify copper as a type of "bullion," a classification normally reserved for precious metals like gold and silver. That regulatory decision affects how financial holding companies are allowed to trade copper.

The National Bank Act expressly authorizes U.S. national banks "to exercise ... all such incidental powers as shall be necessary to carry on the business of banking," including the "buying and selling of exchange, coin, and bullion."[2297] "Bullion" is not defined in the Act. Instead, the OCC, which regulates national banks, has defined the term through interpretative letters, and the Federal Reserve has defined it through regulation.

For many years, the OCC defined "bullion" as "uncoined gold or silver in bar or ingot form."[2298] In 1991, at the request of a bank, the OCC issued a letter which expanded the definition to include platinum.[2299] Four years later, in 1995, again at the request of a bank, the OCC expanded the definition to include palladium.[2300] While platinum and palladium – like gold and silver – have industrial uses, all four have traditionally been traded internationally as precious metals, held primarily for their exchange value rather than industrial use.

A few months after the palladium decision, however, once again at the request of a bank, the OCC expanded the definition of "bullion" a third time to include – for the first and only time – a base metal: copper.[2301] While copper has been used in coins, it has never been traded internationally as a precious metal; it has always been classified and traded as a "base," "non-ferrous," or "industrial" metal. Since adding copper to the definition in 1995, the OCC has not added any other metal to the definition of "bullion."

The OCC's inclusion of copper in the definition of "bullion" materially altered its regulatory treatment for commodity purposes. Prior to its inclusion, copper was subject to all of the limitations imposed by the OCC on bank involvement with physical commodities, including the 5% limit placed by the OCC on physical commodities acquired as hedges for derivative transactions.[2302] Once defined as "bullion," however, copper could be treated in the same way as gold and silver, and exempted from a number of physical commodities restrictions, including size limits.[2303]

[2296] See, e.g., undated "Production and consumption," LME website, https://www.lme.com/metals/non-ferrous/copper/production-and-consumption/ (indicating copper began trading on the LME in 1877).
[2297] 12 U.S.C. §24 (Seventh).
[2298] See, e.g., Banking Circular 58 (Rev.), OCC (11/3/1981), http://www.occ.gov/static/news-issuances/bulletins/pre-1994/banking-circulars/bc-1981-58.pdf.
[2299] See OCC Interpretive Letter No. 553 (5/2/1991), PSI-OCC-01-000112-113.
[2300] OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, at 137 (citing OCC Interpretive Letter No. 683 (7/28/1995) (approving palladium within the definition of "bullion")).
[2301] Id. at 135.
[2302] See OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374.
[2303] OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, (citing 12 U.S.C. §24 (Seventh)). For more information, see discussion of JPMorgan's involvement with size limits, below.

The Federal Reserve has also designated copper as "bullion" in a regulation stating that "[b]uying, selling and storing" physical copper is a "permissible" nonbank activity.[2304] The Federal Reserve explained to the Subcommittee that physical copper could be held and traded by financial holding companies under that regulatory authority and thereby avoid any size limits applicable to complementary, merchant banking, or grandfathering activities.[2305] The Federal Reserve also indicated that financial holding companies would not have to include their copper holdings when reporting the market value of their physical commodity assets to the Federal Reserve.[2306] By treating copper as bullion, the OCC and Federal Reserve have enabled banks and their holding companies to hold physical copper outside of the limits that apply to all other base metals.

(2) JPMorgan Involvement with Copper

JPMorgan is an active trader of physical and financial copper. In recent years, it has engaged in physical copper activities that included outsized transactions and massive copper inventories. JPMorgan also designed and proposed a copper-backed exchange traded fund (ETF), a controversial investment fund which was to be the first ETF backed by a physical industrial metal in the United States. The ETF was designed to acquire copper, place it in storage, and sell investment securities whose value would be tied to copper prices. Some industrial users of copper opposed the proposed ETF, alleging it would artificially restrict copper supplies and raise copper prices and price volatility, unconnected to fundamental forces of supply and demand. JPMorgan has since placed its ETF proposal on hold, but has not withdrawn its proposed registration statement with the Securities and Exchange Commission (SEC). JPMorgan's physical copper activities raise financial risk, conflict of interest, and market manipulation concerns.

(a) Trading Copper

JPMorgan has been trading metals, including copper, for many years.[2307] JPMorgan conducts its copper activities through its Global Metals Group which, according to JPMorgan, is a "core component" of its Global Commodities Group.[2308] The Global Commodities Group, and its Global Metals Group, are part of the financial holding company.[2309] For years, however, the majority of JPMorgan's metals trading has been booked, not through the financial holding company, but through JPMorgan Chase Bank.[2310] The OCC told the Subcommittee that

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[2304] See 12 C.F.R. §225.28(b)(8)(iii) (2/28/1997) (stating that permissible nonbank activities include: "Buying, selling and storing bars, rounds, bullion, and coins of gold, silver, platinum, palladium, copper, and any other metal approved by the Board, for the company's own account and the account of others, and providing incidental services such as arranging for storage, safe custody, assaying, and shipment.").

[2305] 10/28/2014 email from the Federal Reserve to Subcommittee, PSI-FRB-16-000001 - 002.

[2306] Id.

[2307] See, e.g., 1/2012 "JPM Commodity Capabilities," prepared by JPMorgan, FRB-PSI-200832 - 865, at 838 (indicating the Global Metals Group has been transacting business with clients "over the past 30 years").

[2308] Id.

[2309] Id.

[2310] Subcommittee briefing by JPMorgan (10/10/2014); 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-16-000001.

JPMorgan Chase Bank is the only national bank that, in recent years, has engaged in extensive physical metals trading and maintained a large physical metals inventory.[2311]

Two legal entities actually execute metal trades for the bank. The first is a U.K. bank subsidiary, J.P. Morgan Securities PLC, which is a market maker for metals on the LME as well as an LME "Category 1 ring dealer" which gives it special trading status on the exchange.[2312] The second is JPMorgan Ventures Energy Corporation (JPMVEC), a U.S. subsidiary of the financial holding company.[2313] JPMVEC has employees who work for both the holding company and the bank, and handle both financial and physical commodity activities, in an arrangement that has been disclosed to and permitted by the Federal Reserve.[2314]

The Global Metals Group operates a metals trading desk that conducts both financial and physical copper activities.[2315] Its financial activities include trading copper futures, swaps, options, and forwards, as well as financing arrangements, structured transactions, and hedging transactions for clients. Physical activities include buying and selling physical copper on the spot market and through LME warrants.[2316] Although the Global Metals Group is located within the financial holding company, the traders on its metals trading desk are employed by the bank or J.P. Morgan Securities PLC, the bank's subsidiary.[2317] The metals desk traders are also "empowered to act for other legal entities within the JPM group through service agreements that are in place between entities and through 'dual-hatting' arrangements, whereby individuals can be officers of more than one legal entity in the group."[2318] In other words, the same traders on the metals trading desk can book metals trades for both the bank and the financial holding company.

JPMorgan's physical metal holdings increased after its acquisition of Bear Stearns in 2008[2319] and RBS Sempra in 2010.[2320] As part of the RBS Sempra acquisition, JPMorgan

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[2311] Subcommittee briefing by OCC (9/22/2014).
[2312] 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-16-000001.
[2313] Id.
[2314] See 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956." prepared by JPMorgan (requesting a complementary order to conduct physical commodity activities), PSI-FederalReserve-01-000004 - 028, at 012 - 013 (discussing JPMVEC).
[2315] See, e.g., excerpts from undated JP Morgan presentation, "Introduction to JPM Commodities & Steel Hedging/JP Morgan Global Commodities Group," FRB-PSI-301538 - 592, at 592; 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 838.
[2316] See, e.g., undated JPM presentation, "Introduction to JPM Commodities and Steel Hedging," at FRB-PSI-301538 - 592, at 592; 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865.
[2317] 10/23/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-16-000001.
[2318] Id. See also 7/21/2005 "Notice to the Board of Governors of the Federal Reserve System by JPMorgan Chase & Co. Pursuant to Section 4(k)(1)(B) of the Bank Holding Company Act of 1956." prepared by JPMorgan, PSI-FederalReserve-01-000004 - 028, at 012 - 013 (indicating JPMVEC employees can work for both the bank and holding company).
[2319] See, e.g., 7/31/2008 "Supervisory Plan, Risk Assessment Program & Institutional Overview of JPMorgan Chase & Co." prepared by the Federal Reserve, FRB-PSI-305013-030 (identifying Bear Stearns assets being integrated into JPMorgan) [sealed exhibit].
[2320] See, e.g., "2010 CA Quarterly Summary Global Commodities Group," prepared by JPMorgan, FRB-PSI-300645 - 649, at 645; 1/ 2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 836; 7/1/2010 JPMorgan press release, "J.P. Morgan completes commodities acquisition from RBS Sempra,"

gained ownership of the Henry Bath & Sons global network of warehouses, most of which were certified by the London Metal Exchange to store LME metals, including copper.[2321] JPMorgan began marketing Henry Bath warehousing services along with its other financial and physical activities involving metals, including copper.[2322] JPMorgan is also, through J.P. Morgan Securities PLC, a "ring dealing" member of the LME, meaning that its traders can trade copper and other metals on the floor of the LME, and a member of the LME Copper Committee.[2323]

In 2011, JPMorgan described its "base metals" trading activities as "[c]lient-focused trading of aluminium, copper, zinc, lead, nickel and tin in Asia, Europe and the Americas."[2324] It noted that, during 2010, it had executed transactions involving more than 1 million metric tons of metal with a value of $4 billion; and, in 2011, held "1.2 million metric tonnes of [metals] inventory in various global locations with a value of $4.2 [billion]."[2325] In 2012, in a presentation prepared for clients, JPMorgan stated that it was "a member of all the world's leading metals exchanges," traded "metal forwards and options including long dated contracts," had experience with "larger transactions," and was a "leading trader in physical metal."[2326] JPMorgan also noted that, in 2013, its metals business had 650 "[f]inancial" and 166 "[p]hysical" clients.[2327]

JPMorgan's physical metal activities resulted in its holding multi-billion-dollar inventories of various metals, including inventories that experienced significant volatility. For example, in 2010, JPMorgan's inventory of nickel peaked at nearly $2.2 billion, only to fall nearly 85% soon after.[2328] Similarly, in 2011, JPMorgan's platinum holdings peaked at nearly $1.5 billion, only to fall sharply after its peak.[2329] In the largest single base metals holding seen by the Subcommittee, in January 2012, JPMorgan held a nearly $7.5 billion inventory of aluminum, consisting of a whopping 3.5 million metric tons of aluminum,[2330] an amount exceeding over half of the entire North American annual consumption of aluminum that year.[2331]

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https://www.jpmorgan.com/cm/cs?pagename=JPM_redesign/JPM_Content_C/Generic_Detail_Page_Template&cid=1277505237241.

[2321] See, e.g., 4/2011 "Global Commodities - Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 101.

[2322] See, e.g., 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 838, 841.

[2323] See undated "LME Membership," list of "Ring Dealing" members, LME website, http://www.lme.com/en-gb/trading/membership/category-1-ring-dealing/j_p_morgan-securities-plc/; LME Copper Committee, LME website, https://www.lme.com/about-us/corporate-structure/committees/copper-committee/.

[2324] 4/2011 "Global Commodities - Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 101. See also "Commodities[:] Metals," JPMorgan website (listing copper as a "base metal"). https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities/metals

[2325] 4/2011 "Global Commodities - Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 101.

[2326] 1/2012 JPMorgan presentation, "JPM Commodity Capabilities," FRB-PSI-200832 - 865, at 840. See also 9/2013 "Global Commodities Compliance Self Assessment," prepared by JPMorgan, FRB-PSI-301370 - 378, at 372.

[2327] 6/24/2013 "Global Commodities BCC," prepared by JPMorgan, FRB-PSI-301397 - 442, at 411.

[2328] See 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019.

[2329] Id.

[2330] 11/10/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-23-000001 - 006.

[2331] See undated "Primary Aluminum Consumption, 2011-2013," European Aluminum Association website, http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/ (indicating that North American primary aluminum consumption in 2012 was 5.3 million metric tons).

JPMorgan Copper Inventories. In recent years, as part of its copper activities, JPMorgan has held substantial inventories of physical copper and sometimes conducted outsized transactions to build or reduce its holdings. JPMorgan told the Subcommittee that virtually all of its physical copper, like its other base metals, has been held in the name of JPMorgan Chase Bank.[2332]

JPMorgan provided the Subcommittee with information on the market value of its physical copper holdings each year between 2008 and 2013.[2333] The following chart shows how its copper inventories increased tenfold in value over that time period, and how the size of its copper holdings varied significantly during the year:

JPMorgan Physical Copper Inventories by Market Value
2008-2012

	2008	2009	2010	2011	2012	2013**
Year-End Totals*	$148 million	$304 million	$660 million	$1.26 billion	$1.13 billion	$1.7 billion
Maximum During Year	$242 million	$551 million	$1.65 billion	$2.72 billion	$1.22 billion	N/A

* Amounts as of the end of the fiscal year. ** As of June 28, 2013.
Data provided by JPMorgan uses monthly inventory values.
Source: Attachment to 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015; 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," at FRB-PSI-301388.

In December 2010, several media reports named JPMorgan as the undisclosed trader behind a $1.5 billion copper transaction that allegedly led to a single trader holding, as indicated in an LME daily report on warrants, between 50% and 80% of the existing LME warrants for copper, then representing about 350,000 metric tons of copper.[2334] JPMorgan told the Subcommittee that, while it did purchase substantial amounts of copper in November and December 2010, it did so through multiple transactions on behalf of more than 50 clients, and the "trade data does not appear to support the theory that J.P.Morgan's copper warrant position was the result of a single large trade."[2335] JPMorgan also told the Subcommittee that its copper trading decisions were completely unrelated to its proposal for a copper-based exchange traded fund (ETF), described below, noting that the copper trading decisions were made by the metals

[2332] Subcommittee briefing by JPMorgan (10/10/2014).
[2333] See 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015; 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," at FRB-PSI-301382 - 396, at 388.
[2334] See, e.g., "JP Morgan revealed as mystery trader that bought £1bn-worth of copper on LME," The Telegraph, Louise Armitstead and Rowena Mason (12/4/2010), http://www.telegraph.co.uk/finance/newsbysector/industry/8180304/JP-Morgan-revealed-as-mystery-trader-that-bought-1bn-worth-of-copper-on-LME.html; "A Single Trader, JP Morgan, Holds 90% Of LME Copper," Zero Hedge, Tyler Durden (12/21/2010), http://www.zerohedge.com/article/single-trader-jp-morgan-holds-90-lme-copper. See also 12/15/2010 LME daily "Warrant Banding Report," PSI-LME-06-000001 - 003 (showing a single trader holding between 50% and 80% of total LME warrants for copper at that time); 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 002 (indicating LME copper warrants totaled 350,000 metric tons at the time).
[2335] 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 002. See also Subcommittee briefing by JPMorgan legal counsel (10/29/2014).

trading desk, which was completely separate from the "Commodity Investor Products" group that was designing the ETF.[2336]

JPMorgan indicated that according to its records, in December 2010, its copper inventory, which included both LME warrants and a small amount of non-LME warranted copper, "ranged from approximately 198,000 metric tonnes to 213,000 metric tonnes" of copper during the month, which was "approximately 57% to 61%" of all LME copper warrants available at the time.[2337] The market value of its inventory, shown in the above chart, peaked at about $1.65 billion. The increases in JPMorgan's copper inventory took place at the same time copper prices were reaching all-time highs, and as the copper market was anticipating JPMorgan's proposed copper-backed ETF.[2338]

An April 2011 internal analysis by JPMorgan of the operating risks facing its Global Commodities group took particular note of the size of its copper holdings during November 2010, which it described as representing "approx[imately] 52% of the published LME stock," observing that the large position had triggered LME scrutiny of the trading desk.[2339] Federal Reserve records indicate that JPMorgan may have had even more copper than its trading data shows for December 2010. A 2011 Federal Reserve document that was part of the preparation for its special physical commodities review noted that, in December 2010, JPMorgan had reported holding about "332,000 tons of copper (over 50% of available physical inventory) in their own storage facilities."[2340]

Regardless of the exact amount of JPMorgan's copper holdings in late 2010, the facts indicate that JPMorgan held a significant portion of the physical copper available for trading in the United States. JPMorgan told the Subcommittee that, due to its large position in copper, it received LME guidance instructing it to lend some of its holdings to the market.[2341] On December 15, 2010, JPMorgan used the bulk of its copper warrants to settle other obligations, and substantially reduced its inventory to 56,000 tons which represented "roughly 16% of LME copper warrants at that time."[2342] At the time of the December transactions, copper prices were near all-time highs.[2343]

[2336] Subcommittee briefing by JPMorgan legal counsel (10/29/2014); 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 005; 11/13/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-24-000001. Both the metals trading desk and the Commodity Investor Products group are, however, located within the Global Commodities Group at JPMorgan.

[2337] 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan - 18-000001 - 008, at 002.

[2338] See, e.g., "JP Morgan revealed as mystery trader that bought £1bn-worth of copper on LME," The Telegraph, Louise Armitstead and Rowena Mason (12/4/2010), http://www.telegraph.co.uk/finance/newsbysector/industry/8180304/JP-Morgan-revealed-as-mystery-trader-that-bought-1bn-worth-of-copper-on-LME.html ("Traders said JP Morgan's name had been circulating the market all day as the most likely buyer, especially since it is about to launch a physically-backed 'exchange-traded fund' (ETF) in copper imminently. One metals broker dealing on the LME said: 'The story is that they're positioning themselves in front of the ETF. There's been a lot of speculation it's them.').

[2339] 4/2011 "Global Commodities – Operating Risk," prepared by JPMorgan, FRB-PSI-623086 - 127, at 120.

[2340] 2011 "Work Plan for Commodity Activities at SIFIs," prepared by the Federal Reserve, FRB-PSI-200455 - 476, at 464 [sealed exhibit]; Subcommittee briefing by the Federal Reserve (11/27/2013).

[2341] 10/31/2014 letter from JPMorgan legal counsel to Subcommittee PSI-JPMorgan-18-000001 - 008, at 003.

[2342] Id.

[2343] See, e.g., "Historical Copper Prices and Price Chart," prepared by InfoMine Inc., http://www.infomine.com/investment/metal-prices/copper/all/.

After reducing its copper holdings in December, in the first three months of the next year, 2011, JPMorgan re-built its physical copper inventory, attaining a market value even larger than before.[2344] At one point during 2011, as indicated in the chart above, its copper inventory peaked with a market value of $2.7 billion. JPMorgan then sold a large amount of copper, reducing its inventory by about half so that, by the end of the fiscal year, the market value of its remaining copper holdings was about $1.26 billion.[2345] In September 2012, according to JPMorgan, the dollar value of its copper holdings had dropped slightly to about $1.1 billion.[2346] As of June 2013, JPMorgan reported to its regulators that its physical copper inventory had increased once more, to about $1.7 billion, which JPMorgan described as a "key risk position" in the bank.[2347] JPMorgan told the Subcommittee that, since then, it had substantially reduced its copper inventory so that, in September 2014, it had a market value of about $368 million.[2348]

JPMorgan's records show that, in recent years, the bank regularly engaged in massive copper trades that built and reduced its billion-dollar copper inventories. Due to the regulators' classification of copper as bullion, those activities operated outside of the OCC and Federal Reserve size limits on physical commodity activities to reduce risk.

(b) Proposing Copper ETF

In addition to trading copper in the physical and financial markets, in October 2010, JPMorgan filed a registration statement seeking to establish a copper-backed Exchange Traded Fund (ETF) which would have been the first ETF in the United States backed by a physical industrial metal.[2349] The proposed ETF was designed to purchase physical copper, store it in the Henry Bath warehouses owned by JPMorgan, and issue securities linked to the value of that copper. The securities could then be sold and traded on U.S. securities exchanges. The proposed ETF stirred controversy among industrial end-users of copper who viewed it as likely to cause artificial supply shortages and higher and more volatile copper prices by removing large amounts of copper from the marketplace for indeterminate amounts of time.[2350] While JPMorgan characterized the ETF as providing "a simple and cost-effective means of making an investment similar to an investment in copper,"[2351] others compared it to the Hunt Brothers' silver scandal and characterized it as an attempt to legally corner and squeeze the copper market to raise

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[2344] Id.; "JPMorgan Physical Copper Inventories by Market Value chart," above.
[2345] 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019. See also 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.
[2346] Attachment to 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.
[2347] 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," FRB-PSI-301382 - 396, at 388.
[2348] Attachment to 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000049.
[2349] See 10/22/2010 Form S-1 Registration Statement, J.P. Morgan Physical Copper Trust, filed by JPMorgan, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000119312510234452/ds1.htm.
[2350] See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC on behalf of copper end-users and a copper merchant, File Number SR-NYSEArca-2012-28, SEC website, http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf.
[2351] 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8, at 3, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm.

prices.[2352] The proposal went through a lengthy review process at the SEC which, in 2012, approved a rule change to allow the ETF to be listed on an exchange for trading, but JPMorgan then placed the project on hold.[2353]

Commodity-based ETFs. Exchange traded funds enable investors to buy and sell interests in a fund on a stock exchange in the same way that investors can use the stock exchange to buy and sell shares in a corporation.[2354] The first ETF issuing securities linked to commodity prices appeared on a U.S. stock exchange in 2004, when interests in an ETF linked to gold prices began trading.[2355] Commodity-related ETFs can attract smaller investors more easily than commodity exchanges which use standardized futures and swaps contracts requiring relatively large investments; for example, LME copper futures currently require an initial investment of about $6,500 to purchase a single contract.[2356] Interests in commodity-related ETFs typically trade for much less. Currently, retail investors and market participants can buy and sell interests in a wide variety of commodity-related ETFs, some of which reference a single commodity[2357] and others of which track broad commodity indexes.[2358]

Commodity-related ETFs use several different methods to establish their value. Some track one or more commodity indexes; some acquire commodity-related futures or other financial instruments; others acquire an inventory of actual physical commodities; while still others may offer a combination of those techniques, in each case linking the ETF's value to the value of the specified commodities. By investing in commodity-related ETFs, investors gain or lose value according to the rise or fall in the relevant commodity prices.[2359]

JPMorgan Copper ETF. In October 2010, JPMorgan filed an S-1 registration statement with the Securities and Exchange Commission (SEC) proposing to create an ETF called the "J.P. Morgan Physical Copper Trust."[2360] In 2011, the name was changed to "JPM XF Physical Copper Trust" (JPMorgan Copper ETF).[2361] The ETF was structured as a Cayman Island trust whose assets were limited to a single physical commodity, copper. Its investment objective was

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[2352] See, e.g., "Who Cornered the Copper Market? (JPM. JJC. COPX. SCCO. FCX)," 247WallStreet (12/23/2010), http://247wallst.com/commodities-metals/2010/12/23/who-cornered-the-copper-market-jpm-jjc-copx-scco-fcx/; "Copper: Part 2, The Next ETF," Jack H. Barnes website (12/4/2010), http://jackhbarnes.wordpress.com/2010/12/04/copper-part-2-the-next-etf/.

[2353] Subcommittee briefing by JPMorgan (10/10/2014).

[2354] 3/11/2013 letter from Senator Carl Levin to SEC, "JPM XF Physical Copper Trust, Form S-1 Registration Statement," (hereinafter, 2013 Levin letter"). PSI to SEC (March 11 2013)-000001 - 015, at 002.

[2355] Id; "How gold ETFs have transformed the market in 10 years," Market Watch, Myra P. Saefong (3/29/2013), http://www.marketwatch.com/story/how-gold-etfs-have-transformed-market-in-10-years-2013-03-29.

[2356] See "Copper," LME website, https://www.lme.com/en-gb/metals/non-ferrous/copper/.

[2357] See, e.g., "SPDR Gold Shares: An Exchange Traded Gold Security," http://www.spdrgoldshares.com/.

[2358] See, e.g., "iShares S&P GSCI Commodity-Indexed Trust," http://www.ishares.com/us/products/239757/ishares-sp-gsci-commodityindexed-trust-fund.

[2359] See 2013 Levin letter, PSI to SEC (March 11 2013)-000001 - 015, at 002.

[2360] 10/22/2010 Form S-1 Registration Statement, J.P. Morgan Physical Copper Trust, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000119312510234452/ds1.htm.

[2361] 6/10/2011 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 4, SEC website, http://www.sec.gov/Archives/edgar/data/1503754/000095010311002278/dp23025_s1a4.htm.

to reflect the spot price of copper, less trust expenses and fees.[2362] JPMorgan affiliates were to serve as the fund's investment adviser, administer the trust, acquire the copper, store it at JPMorgan-owned Henry Bath warehouses, and help sell securities to investors, among other services, all of whose costs would be borne by the investors in the fund.[2363] JPMorgan also disclosed in the proposed registration statement that it planned to have the ETF indemnify JPMorgan and its affiliates from any lawsuit filed by an aggrieved investor.[2364]

According to the proposed registration statement, the JPMorgan Copper ETF would not sell individual securities in the investment fund; instead, it would sell large blocks, or "Creation Units," of 2,500 securities each to "Authorized Participants" (APs) who were authorized to sell them to individual investors.[2365] To obtain a block of securities, the AP would be required to deliver to the ETF a specified amount of physical copper whose dollar value would support the fund.[2366] After delivering the copper, the AP could begin selling the ETF securities to investors who could, in turn, trade them on a U.S. stock exchange.[2367] JPMorgan indicated in the registration statement that it planned to act as one of the Authorized Participants.

JPMorgan's registration statement explained that, if copper prices increased, the value of the ETF securities would increase, and investors would gain; conversely, if prices dropped, the securities' values would fall, and investors would lose.[2368] If the fund attracted sufficient investment, the ETF could sell more blocks of securities to Authorized Participants in exchange for additional copper deliveries.[2369] If investors left the fund, the ETF could reduce its copper holdings, selling the copper on the spot market or through other arrangements.[2370]

After several years of debate and controversy, on December 14, 2012, the SEC approved a proposed rule change by NYSE Arca Inc. to list the copper ETF for trading.[2371] A copper merchant and four industrial copper end-users sent a joint request for the SEC to reconsider its decision, warning that the ETF's removal of physical copper from the market would disrupt supply and demand fundamentals, cause damaging price increases, and lead to commercial supply shortages.[2372] But in March 2013, the SEC reaffirmed its decision.[2373]

[2362] See 4/5/2013 Form S-1 Registration Statement, JPM XF Physical Copper Trust, Amendment No. 8 (hereinafter, "JPMorgan Copper Trust Registration Statement, Amendment No. 8"), at 1. SEC website. http://www.sec.gov/Archives/edgar/data/1503754/000095010313002224/dp37414_s1a8.htm.
[2363] Id. at 83 - 84.
[2364] Id. at 87. See also 2013 Levin letter, at PSI to SEC (March 11 2013)-000014.
[2365] Id. at 85 - 86.
[2366] See 2013 Levin letter, at PSI to SEC (March 11 2013)-000003.
[2367] Id.
[2368] See JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 15.
[2369] Id. at 78 - 79.
[2370] See 2013 Levin letter, at PSI to SEC (March 11 2013)-000002.
[2371] See 12/14/2012 SEC Release No. 34-68440, File No. SR-NYSEArca-2012-28, "Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendment No. 1 to List and Trade Shares of the JPM XF Physical Copper Trust Pursuant to NYSE Arca Equities Rule 8.201," filed by the SEC, http://www.sec.gov/rules/sro/nysearca/2012/34-68440.pdf.
[2372] See 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC, File Number SR-NYSEArca-2012-28, SEC website, http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf.
[2373] See 3/28/2013 SEC Release No. 34-69256, File No. SR-NYSEArca-2012-28, "Self-Regulatory Organizations; NYSE Arca, Inc.; Response to Comments Submitted After the Issuance on December 14, 2012, of a Notice of Filing

Challenges were also filed to JPMorgan's proposed registration statement, contending that it failed to provide sufficient information to investors about, among other matters, how JPMorgan's copper activities could affect the fund; what roles would be played by JPM affiliates in administering the fund, and how those affiliates would be compensated; whether JPMorgan's interests were aligned with or could adversely affect the fund's clients; and how the fund would handle conflict of interest and market manipulation issues.[2374] Over the course of two years, JPMorgan amended its proposed registration statement eight times to address numerous concerns,[2375] but the statement has yet to be deemed effective by the SEC.[2376] JPMorgan told the Subcommittee that it has placed its copper ETF proposal on indefinite hold.[2377]

(3) Issues Raised by JPMorgan's Involvement with Copper

JPMorgan's copper activities raise two sets of concerns. The first focuses on the loophole in the regulatory rules for physical commodities that exempts copper from size limits and other safeguards to ensure physical commodity activities are carried out in a financially safe and sound manner. The second focuses on the conflict of interest and market manipulation concerns related to the proposed JPMorgan Copper ETF.

(a) Unrestricted Copper Activities

Over the past five years, JPMorgan has conducted massive copper trades, including some in late 2010 involving billions of dollars and over 50% of the LME's total copper warrants. In 2011, its physical copper inventory peaked at more than $2.7 billion. To the Subcommittee's knowledge, JPMorgan is the only large U.S. financial holding company that conducts copper trading primarily through its federally insured national bank.

As discussed in the following section, both the OCC and the Federal Reserve impose size limits on physical commodity activities to ensure they do not threaten the safety and soundness

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of Amendment No. 1 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendment No. 1 to List and Trade Shares of the JPM XF Physical Copper Trust Pursuant to NYSE Arca Equities Rule 8.201," filed by the SEC. SEC website, http://www.sec.gov/rules/sro/nysearca/2013/34-69256.pdf/.

[2374] See, e.g., 2013 Levin letter. PSI to SEC (March 11 2013)-000001 - 015.

[2375] See 4/5/2013 JPMorgan Copper Trust Registration Statement, Amendment No. 8.

[2376] Subcommittee briefing by the SEC (10/8/2014).

[2377] Subcommittee briefing by JPMorgan (4/23/2014). The JPMorgan registration statement represents the largest proposed copper ETF to date, but it is not the only proposal. A second is the BlackRock iShares Copper Trust, which was proposed in 2011, and approved by the SEC in 2013, but still not finalized. See 9/2/2011 Form S-1 Registration Statement, iShares Copper Trust, Amendment No. 4. SEC website. http://www.sec.gov/Archives/edgar/data/1504251/000119312511240231/ds1a.htm; 2/22/2013 SEC Release No. 34-68973, File No. SR-NYSEArca-2012-66. "Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Amendments No. 1 and No. 2 and Order Granting Accelerated Approval of a Proposed Rule Change as Modified by Amendments No. 1 and No. 2 to List and Trade Shares of the iShares Copper Trust Pursuant to NYSE Arca Equities Rule 8.201," filed by SEC, http://www.sec.gov/rules/sro/nysearca/2013/34-68973.pdf. Additionally, a London-based investment firm called ETF Securities introduced a physical copper ETF in Europe that is similar to, but much smaller than, the JPMorgan and BlackRock proposals. It holds only about 3,400 metric tons of copper, while the JPMorgan and BlackRock proposals collectively seek to place in storage about 70% of the current copper stocks in LME warehouses. See "SEC Approves JPMorgan's Plan For Copper ETF, First in US," Reuters (12/17/2012), http://www.moneynews.com/Markets/SEC-JPMorgan-Copper-ETF/2012/12/17/id/467985/.

of the financial institutions conducting those activities.[2378] The OCC limits banks to settling no more than 5% of their derivative transactions by taking physical delivery of commodities. The Federal Reserve limits financial holding companies to conducting complementary physical commodity activities at no more than 5% of their Tier 1 capital. Activities involving "bullion," however, are exempted, not only from those limits, but also from any monitoring and reporting requirements related to the size of physical commodity activities.

JPMorgan informed the Subcommittee that it did not include any of its copper holdings when calculating the market value of its physical commodity holdings for purposes of complying with the OCC and Federal Reserve size limits.[2379] JPMorgan indicated, for example, that when it added up the dollar value of its physical commodity holdings to gauge compliance with the OCC's derivatives limit, it omitted its copper holdings, which often exceeded $1 billion.[2380] JPMorgan explained that it also did not include copper – or any of the metal holdings at its bank – when calculating compliance with the Federal Reserve's complementary limit, because they were not held pursuant to its complementary authority from the Federal Reserve.[2381] When the Subcommittee asked the Federal Reserve about JPMorgan's exempting its copper holdings from the regulatory size limits, the Federal Reserve confirmed that copper trading activities are, in fact, conducted under a separate Federal Reserve grant of regulatory authority for "bullion,"[2382] and so were not conducted under JPMorgan's complementary authority and were not subject to the 5% limit.[2383]

Exempting "bullion" from physical commodity limits and reporting requirements rests on the traditional role of banks using gold and silver as mediums of exchange; while anachronistic, that exception has been viewed as a limited one.[2384] Extending the definition of "bullion" to copper dramatically stretched the exception. In its 1995 interpretative letter deciding that copper could be treated as "bullion," the OCC ignored copper's longstanding, worldwide trading status as a base metal, and instead highlighted other characteristics:

> "Copper, like platinum and palladium, has been used to mint legal-tender coins. ... Additionally, copper, like platinum and palladium, is bought and sold as a metal in a mass standardized as to weight and purity."[2385]

Focusing on the use of copper in coins and the use of standardized weight and purity requirements in copper trading does not explain, however, why copper merits special status. Other base metals, such as zinc, nickel, and even steel, have been used to make coins in the United States. In fact, the penny – the U.S. coin most closely associated with copper – has been

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[2378] See discussion of JPMorgan's involvement with size limits, below.
[2379] Subcommittee briefing by JPMorgan (10/10/2014).
[2380] Id.
[2381] Subcommittee briefing by JPMorgan (10/10/2014). For more information about exempting its bank's holdings from the Federal Reserve's size limit, see discussion in the next section, below.
[2382] Subcommittee briefing by Federal Reserve (10/8/2014); 12 C.F.R. §225.28(b)(8)(iii).
[2383] 10/30/2014 email from the Federal Reserve to the Subcommittee, PSI-JPMorgan-15-000001 - 008, at 002-003.
[2384] The Subcommittee did not examine the gold, silver, platinum, and palladium trading undertaken by the financial institutions that are the subject of this Report, and has no data on the actual size of that trading activity.
[2385] OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141, 138.

composed of 97.5% zinc since 1984.[2386] Moreover, a broad swath of base metals, including aluminum, lead, steel, and uranium, are traded using standardized weight and purity requirements.[2387] Even today, more than 15 years after the OCC's determination, banks – including JPMorgan Chase Bank,[2388] trading firms,[2389] analysts,[2390] and exchanges[2391] continue to treat copper for trading and risk management purposes as a base metal, not a precious metal. U.S. bank regulators' contrary stance is out of alignment with worldwide trading norms.

Given copper's widely-accepted trading status as a base metal, the impact of copper price volatility on end-users, and financial holding company involvement with massive copper inventories and transactions, the Federal Reserve and OCC should treat copper as subject to all the same size limits and reporting requirements that apply to other base metals. Otherwise, copper will continue to provide a loophole that can be used to circumvent otherwise applicable physical commodity safeguards important to protecting U.S. taxpayers from risks related to physical commodity activities.

[2386] See undated "The Composition of the Cent," United States Mint, http://www.usmint.gov/about_the_mint/fun_facts/?action=fun_facts2.

[2387] See "Metals Used in Coins and Medals," Coins of the UK, Tony Clayton (3/9/2014), http://www.coins-of-the-uk.co.uk/pics/metal.html.

[2388] See e.g., undated "Commodities," JPMorgan website, https://www.jpmorgan.com/pages/jpmorgan/investbk/solutions/commodities/metals (listing copper as a "base metal" on its Products & Solutions webpage); 9/26/2013 "FED/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, FRB-PSI-301383-396, at 388 (including copper, along with aluminum, nickel, and zinc, under the heading "Base Metal" and identifying a copper holding as one of the bank's "Key Risk Positions"); 7/24/2013 "Mining commodities: The focus shifts to the supply side," prepared by Goldman, http://ucore.com/Commodities_Supply_Side.pdf (explaining in a 2013 report on investment strategies that, because copper was expected to underperform zinc and lead: "Copper has shifted to [their] least preferred base metal on a 6-18 month view"); 12/10/2010 "2011 Outlook: A Commodity Bull Market," prepared by Morgan Stanley, at 1 and 7, file:///C:/Users/am44209/Downloads/COMMODITIES_2011_OUTLOOK.pdf (describing copper as Morgan Stanley's "favorite base metal," with "copper fundamentals" that "remain the strongest in the base metal complex").

[2389] See, e.g., undated "Base Metals," Mercuria Energy Trading, http://www.mercuria.com/trading/base-metals (listing copper, along with aluminum, lead, zinc, nickel and tin, on its "base metals" information page); undated "Trading: Refined Metals: Products," Trafigura website, http://www.trafigura.com/trading/non-ferrous-and-bulk/refined-metals/ (describing its metals business as dealing "mainly in London Metal Exchange (LME) deliverable grades for the major base metal markets, including copper, lead, zinc, nickel and aluminium"); undated, "Base Metals[:] Copper," Metal Bulletin website, http://www.metalbulletin.com/Base-metals/Copper.html#axzz3GEGCyEkl.

[2390] See, e.g., 4/9/2012 "CPM Group: Commodities Views-Apr 9," prepared by CPM Group, http://www.cmegroup.com/education/files/14-CPM_Commodities_Views_8-14_2012-04-09.pdf; undated, "Base Metals," CPM Group, http://www.cpmgroup.com/our-commodities-coverage/base-metals (listing copper as a base metal on the website and in the weekly commodities view report of CPM Group, a commodities research firm).

[2391] See, e.g., 9/4/2014, "New Products Briefing - LME and HKEx: Base Metals Seminar," LME website, http://www.lme.com/news-and-events/events/events/2014/09/new-products-briefing-_-lme-and-hkex--singapore/ (announcing a new base metals seminar to launch London Metal mini contracts "in base metals such as copper, aluminum and zinc"); 9/5/2014, "Precious Metals Price Data and Matching and Clearing Services," LME website, http://www.lme.com/~/media/Files/Notices/2014/2014_09/14%20269%20A261%20Precious%20Metals%20Price%20Data%20and%20Matching%20and%20Clearing%20Services.pdf (omitting copper from its precious metals price data and clearing services); undated, "Metals Product Slate," CME Group website, http://www.cmegroup.com/trading/metals/ (listing copper and aluminum in its "base metal" subgroup and not under its "precious metals" subgroup.); undated "Commodity Market Commentary: Energy, Metals and the Soft Commodities," CME Group website, http://www.cmegroup.com/education/featured-reports/cpm-group-commodities-views.html (listing copper in the base metals subgroup).

(b) ETF Conflicts of Interest

A second set of concerns involves JPMorgan's proposal to construct an Exchange Traded Fund (ETF) backed by physical copper. While this proposal is currently on hold, the relevant registration statement has not been withdrawn from the SEC by JPMorgan, and the registration process could be easily re-started.[2392] For that reason, the JPMorgan Copper ETF continues to raise conflict of interest and market manipulation concerns that need to be addressed.

One area of potential conflicts of interest involves JPMorgan's ownership of a significant copper inventory and its active copper trading activities at the same time it has been working to create a copper-backed ETF. As indicated earlier, JPMorgan's copper inventory fluctuated from 2010 to 2013, peaking at $2.7 billion but rarely falling below $1 billion in market value. JPMorgan told the Subcommittee that its massive copper acquisitions were unrelated to its ETF.[2393] Nevertheless, its copper-backed ETF was designed to acquire a large physical copper inventory, and its registration statement indicated that JPMorgan planned to be one of the Authorized Participants that would deposit physical copper with the fund in exchange for ETF securities. In late 2010, in the two months after the ETF registration was first filed with the SEC, JPMorgan initiated trades that led to its amassing an enormous copper inventory. Analysts at the time predicted copper prices would rise as a result of JPMorgan's large copper purchases.[2394] Soon after, JPMorgan sold the bulk of its copper holdings over a short period of time, suddenly increasing the marginal amount of copper available for trading, while contributing to volatility and downward pressure on copper prices. Those large trades demonstrate how JPMorgan could impact the value of the copper placed in its copper-backed ETF and do so through trades that could be beneficial or adverse to potential ETF investors.

By forming and administering the ETF, JPMorgan would also have positioned itself to gain access to commercially valuable, non-public ETF information that could have been used to benefit its trading activities, again, at times, in ways that could have been adverse to ETF investors. JPMorgan had arranged for its affiliates to advise and administer the ETF, necessarily giving them access to the ETF's internal records on copper investments and physical copper movements. Those JPMorgan affiliates would have gained access, for example, to information about plans by an Authorized Participant to buy physical copper to place in the ETF, an action which, if known beforehand, could have provided JPMorgan traders with an opportunity to profit from marginal supply shortages and rising copper prices. Alternatively, information that ETF investors were leaving the fund and might trigger a release of copper into the marketplace could have provided JPMorgan traders with an opportunity to short copper futures and benefit from lower prices. In that instance, JPMorgan could have initiated trades against the interests of ETF investors seeking higher copper prices. The JPMorgan registration statement recognized that possibility, stating that it had "not established formal procedures to resolve potential conflicts of

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[2392] Subcommittee briefing by the SEC (10/8/2014).

[2393] 10/31/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-18-000001 - 008, at 005.

[2394] See, e.g., "Copper price set to rise further after JP Morgan bet," The Telegraph, Rowena Mason (12/6/2010), http://www.telegraph.co.uk/finance/newsbysector/industry/mining/8182493/Copper-price-set-to-rise-further-after-JP-Morgan-bet.html.

interest," which would protect investors in the event that JPMorgan affiliates traded against the interests of the ETF investors.[2395]

Still another set of issues involves potential manipulation of copper prices. By amassing large amounts of physical copper, the JPMorgan Copper ETF would have made the copper market more susceptible to being squeezed by speculators. In 1996, a major scandal over copper prices involved the purchase of massive amounts of copper by the Sumitomo Corporation's chief copper trader who used those copper holdings to corner and squeeze the market and artificially inflate copper prices.[2396] Additional squeezes in the copper market by unnamed traders amassing large copper holdings have generated media reports over the last few years.[2397] The JPMorgan Copper ETF could have made the market even more susceptible to squeezes, because it would have been used by market participants to remove copper from the available market supply which, in turn, could have inflated copper prices. JPMorgan's own registration statement acknowledged that the ETF, "as it grows, may have an impact on supply and demand for copper that ultimately may affect the price of the shares in a manner unrelated to other factors affecting the global markets for copper."[2398] In other words, the ETF, by removing copper from the marketplace, could affect copper prices in a way unrelated to fundamental supply and demand forces and which could act effectively as a manipulation of the price.

The market manipulation problem would have been magnified by the fact that the ETF's activities would have taken place without oversight from commodities regulators, because ETFs operate in securities markets and are not currently subject to commodities regulation. Instead, because ETFs issue securities to their investors, ETFs are currently regulated solely by securities regulators like the SEC, and not by commodities regulators, like the LME or Commodity Futures Trading Commission (CFTC). By holding physical copper that is not subject to LME warrants, the JPMorgan Copper ETF could have positioned itself to control a substantial portion of the available supply of physical copper without triggering LME or CFTC surveillance, rules, or reporting requirements.

How the ETF planned to detect and prevent its misuse as a means of market manipulation was not addressed in the JPMorgan Copper ETF registration statement. As Subcommittee Chairman Levin put it in a letter challenging the registration:

[2395] JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 23.

[2396] See, e.g., Global Derivative Debacles: From Theory to Malpractice, Laurent L. Jacque (World Scientific 2010), Chapter 7, at 97–101; "The Copper King: An Empire Built On Manipulation," Investopedia, Andrew Beattie (undated). http://www.investopedia.com/articles/financial-theory/08/mr-copper-commodities.asp.

[2397] See, e.g., "Copper market expects squeeze, big holding appears," Reuters, Eric Onstad, (7/2/2012), http://www.reuters.com/article/2012/07/02/us-copper-tightness-idUSBRE8610XK20120702; "The Big Squeeze - mystery hand scoops up copper." Reuters (12/20/2013), http://www.reuters.com/article/2013/12/20/copper-squeeze-idUSL6N0JX2FG20131220 ("Someone has made a near billion-dollar bet on copper this week, virtually cornering the world's key stocks of the metal. That has stoked worries of a supply squeeze, as warehouses run low on a raw material vital to global industry, and has raised questions about commodity exchanges' efforts to curb attempts to manipulate prices by aggressively heavy trading."); "Single Firm Holds More Than 50% of Copper in LME Warehouses," Wall Street Journal, Sarah Kent, Ese Erheriene, Ira Iosebashvili (10/26/2014), http://online.wsj.com/articles/single-firm-holds-more-than-50-of-copper-in-lme-warehouses-1414361984?cb=logged0.029922920788449 88.

[2398] JPMorgan Copper Trust Registration Statement, Amendment No. 8, at 21.

> "The S-1 [registration statement] does not identify, discuss, or present actions that could be taken to address the legal issues that might arise if the ETF itself is seen as fostering price distortions, squeezes, corners, or other price manipulations in the copper market. Nor does the S-1 detail what policies and procedures JPMorgan would follow to ensure that its other trading and business interests are not impermissibly conflicted with those invested in [the JPMorgan Copper ETF]. ...
>
> As currently configured, the [JPMorgan Copper ETF] Trust contains no provisions to prevent high investor demand from causing an increase in copper prices or, alternatively, a quick drop in demand from driving down copper prices. The risk of a bubble in the copper market creates a corresponding risk that the bubble will eventually burst. If that happens, investors may dump thousands of metric tons of copper back onto the market, swamping the market and depressing the price, impacting not only copper-reliant industries around the world, but also possibly producing large gains for any parties shorting the copper market."[2399]

The many conflict of interest and market manipulation concerns raised by an ETF backed by physical commodities are not fully addressed or resolved in the JPMorgan Copper ETF registration statement or the existing regulatory framework. If a financial holding company were to be found to have engaged in market manipulation through an ETF, it could lead to copper price distortions, civil and criminal actions by law enforcement agencies, lawsuits by ETF investors, legal expenses, penalties, and other consequences.

(c) Potential Economic Impacts of a Copper ETF

Aside from conflict of interest and market manipulation concerns, a copper-backed ETF may have significant impacts on the broader economy, by increasing commodity costs and price volatility for consumers and producers. Some commentators have said the financialization of base metals would "wreak havoc on the US and global economy."[2400] Those commentators note that the intent of a commodity-based ETF is to provide speculators with a way to bet on the price of the underlying commodity. Two supply and demand curves result – one for the physical commodity such as metal, and another for the financial product related to that metal. Although the two are integrally related, they are distinct. For example, investors in a copper ETF may not be interested in using the copper; their goal may simply be to profit from changes in copper prices. Their investments are likely to drive up prices for consumers who actually use physical copper by reducing the supply of copper available on the market.

The market impact of a copper ETF may be exacerbated by the fact that copper has not historically been held for investment purposes.[2401] Copper is expensive to store and difficult to transport.[2402] Its supply and demand functions have traditionally been set according to

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[2399] 2013 Levin letter, at PSI to SEC (March 11 2013)-000008.

[2400] "Copper ETF Plan Would 'Wreak Havoc,'" Financial Times, Jack Farchy (3/23/2012), http://www.ft.com/intl/cms/s/0/a7d32d4c-a4fb-11e1-b421-00144feabdc0.html#axzz3DOphziCJ.

[2401] See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC, File Number SR-NYSEArca-2012-28, at 26 – 28, SEC website, http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf.

[2402] See, e.g., JPMorgan Copper Trust Registration Statement, Amendment No. 1, at 40-41.

commercial and personal uses, and not as a store of value.[2403] That means, if a copper ETF were to be established, manufacturers, fabricators, and other industrial businesses that use copper would be forced to compete with speculators holding copper as a passive asset, changing the market dynamics of copper's supply and demand functions and introducing greater volatility. [2404]

For those reasons, the acquisition and holding of copper for investment purposes may have a greater impact on physical markets[2405] and the broader economy[2406] than ETFs holding palladium, platinum, silver, or gold. At the same time, a commodity-backed ETF can have a significant impact on the price and volatility of the underlying commodity, even when a precious metal is involved. For example, gold-related ETFs first surfaced in 2004,[2407] with dozens of similar ETFs springing up over time.[2408] Today, it has become clear that significant movements in the gold-related ETFs have had direct impacts on the price of physical gold.[2409] As one analyst in the field noted: "You watch the flow of money .... No matter what the supply-and-demand fundamentals [for physical gold] may suggest, if that money's flowing, those prices are going to move."[2410] The Wall Street Journal cited as a possible explanation for the impact of gold ETFs on physical gold prices, the relatively small size of the gold market, estimated at $236 billion in annual sales in 2012, and the ETFs' significant share of those sales.[2411]

A copper-based ETF could create a similar dynamic with copper prices, with potentially even more dramatic effects on copper producers and consumers around the world, because of the larger size of the copper market.

(d) Inadequate Safeguards

A final set of concerns involves the lack of regulatory safeguards applicable to both copper and copper-backed ETFs. The regulatory decision to treat copper as "bullion" has already exempted copper as a class from OCC and Federal Reserve size limits intended to reduce risk. Similar regulatory gaps apply to copper-backed ETFs. Because commodity-related ETFs issue securities to investors, they operate outside of all commodity regulation and oversight, even though they directly impact both commodity prices and commodity trading. In addition,

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[2403] See, e.g., 1/9/2013 letter from Robert B. Bernstein, Eaton & Van Winkle LLP, filed with the SEC. File Number SR-NYSEArca-2012-28, at 26-28, SEC website, http://www.sec.gov/comments/sr-nysearca-2012-28/nysearca201228-30.pdf.

[2404] Id. See also 2013 Levin letter, at PSI to SEC (March 11 2013)-000003.

[2405] See "Speculative Influences on Commodity Futures Prices," Christopher Gilbert (2010), http://unctad.org/en/docs/osgdp20101_en.pdf, at 8.

[2406] See "The Growing Financialisation of Commodity Markets: Divergences between Index Investors and Money Managers," Journal of Developmental Studies, Vol. 48, Issue 6. (2012). Jörg Mayer (UNCTAD). at 752 - 753.

[2407] 2013 Levin letter, at PSI to SEC (March 11 2013)-000002.

[2408] See, e.g., Form S-1 Registration Statement, streetTRACKS Gold Trust, Amendment No. 5 (11/16/2004), Securities and Exchange Commission website, http://www.sec.gov/Archives/edgar/data/1222333/000095013604004007/file001.htm; Form S-1 Registration Statement, iShares COMEX Gold Trust, Amendment No. 4 (1/25/2005), Securities and Exchange Commission website, http://www.sec.gov/Archives/edgar/data/1278680/000119312505011426/ds1a.txt.

[2409] "Does a Big ETF Drive Gold's Price?" Wall Street Journal, Rob Curran (5/5/2013), http://online.wsj.com/news/articles/SB10001424127887324030704578426613352725022.

[2410] Id.

[2411] Id.

physical metals like copper generally fall outside of federal regulation, which currently focuses on the financial market for metals rather than the physical market, even though contracts to buy metals like copper in the physical market may reference prices set in the LME futures market.

Federal banking regulators should treat ETFs backed by physical commodities as within the category of physical commodity activities subject to their oversight. ETFs backed by physical commodities carry conflict of interest and market manipulation risks that can threaten the safety and soundness of affiliated banks and their holding companies. Federal bank regulators should make it clear that those ETFs are physical commodity activities subject to review, and impose regulatory constraints to reduce their risks, including size limits and safeguards to prevent conflicts of interest and market manipulation. Commodity regulators like the CFTC should also work with the SEC to apply position limits or other restrictions to ETF owners, organizers, and authorized participants to prevent the misuse of ETFs backed by physical commodities to manipulate commodity prices.

(4) Analysis

JPMorgan has a long history as an active trader in copper markets. At times, it has amassed copper holdings worth billions of dollars, carrying financial risks due to volatile copper prices. It is not the only financial holding company with large copper holdings; for example, in January 2011, according to the Federal Reserve, Goldman held copper worth $2.3 billion.[2412] Those copper holdings should be subject to the same size limits as all other physical commodities, but currently are not. Federal bank regulators should ensure that copper's status as "bullion" does not lead to federally insured banks and their holding companies engaging in copper activities on an unrestricted basis, but instead ensure they operate within limits that reduce the risks associated with investing in such a volatile commodity.

In addition, while JPMorgan has placed its plan to offer a copper-backed ETF on hold, it could revive that proposal at any time. If it were to obtain approval of its registration statement, the resulting copper-backed ETF could distort copper markets worldwide with artificial supply shortages and price swings, create conflicts of interest between JPMorgan and the ETF investors, and expose JPMorgan to possible legal actions to prevent or halt market manipulation. If allowed to proceed, JPMorgan could also set an ill-advised precedent for other bank-sponsored commodity-backed ETFs that could raise similar concerns and have similar negative impacts on commodity markets. Regulators should act now to make clear that ETFs backed by physical commodities will be treated as a physical commodity activity subject to oversight, and develop safeguards to detect and prevent conflicts of interest and market manipulation.

[2412] 2011 "Work Plan for Commodity Activities at SIFIs," prepared by the Federal Reserve, FRB-PSI-200455 - 476, at 464 [sealed exhibit].

D. JPMorgan Involvement with Size Limits

This final part of the JPMorgan case study examines, not a particular commodity, but issues related to financial holding company compliance with regulatory limits on the size of their physical commodity holdings. Those size limits were established to reduce the risks associated with those activities, protect the safety and soundness of the banks and their holding companies, and ensure that the banks and their holding companies remain engaged primarily in the business of banking and conduct only a limited amount of physical commodity activities.

The Federal Reserve, which is the primary regulator for financial holding companies, imposes several distinct limits on physical commodity activities. Depending on which authority is being relied upon, the activity may be: (i) limited to not more than 5% of the financial holding company's Tier 1 capital; (ii) limited to not more than 5% of the financial holding company's total consolidated assets (a much larger number); or (iii) subject to no limit at all. In addition, the Office of the Comptroller of the Currency (OCC), which is the primary regulator for national banks, has its own size limit on physical commodity activities. It requires that physical commodities transactions be conducted in only a "nominal" amount, comprising "no more than 5%" of the bank's commodity derivative transactions. Neither regulator has issued formal guidance on how to implement their limits or, until recently, required regular reports tracking compliance. Nor are their limits coordinated in any comprehensive or coherent way.

The Federal Reserve and OCC size limits applicable to JPMorgan and JPMorgan Chase Bank respectively were the Federal Reserve's 5% limit on complementary activities, and the OCC 5% limit on commodity derivative transactions that are physically settled. For years, JPMorgan and its bank employed aggressive interpretations on how to interpret and apply those two limits, at times without alerting regulators to their actions. In some cases, JPMorgan and JPMorgan Chase Bank implemented their respective size limits in ways that were later – after the regulators learned of them – rejected by the Federal Reserve or OCC. In other circumstances, its aggressive interpretations and implementation methodologies were allowed to continue, even after regulators learned of them.

The end result was that JPMorgan maintained physical commodity holdings far larger than the limits would suggest. In September 2012, for example, JPMorgan held physical commodity assets – excluding gold, silver, and commodity-related merchant banking assets – that had a combined market value of $17.4 billion, which at the time equaled nearly 12% of its Tier 1 capital of $148 billion. JPMorgan asserted, however, that due to various exclusions allowing it to omit certain categories of assets when calculating compliance, the market value of its physical commodity assets for purposes of the Federal Reserve's 5% limit was only $6.6 billion or 4.5% of its Tier 1 capital. The Federal Reserve told the Subcommittee that it had not yet objected to the exclusions JPMorgan was using to claim compliance with the 5% limit. That JPMorgan could claim to be in compliance with a 5% limit when its physical commodities were, in fact, more than double that size demonstrates how the current regulatory limits are riddled with exclusions, poorly coordinated, and currently ineffective to protect taxpayers from financial holding companies engaging in excessive amounts of high risk physical commodity activities.

(1) Background on Size Limits

Financial holding companies and their banks, when engaged in physical commodity activities, are subject to several sets of prudential limits on size enforced by the Federal Reserve and OCC.

Federal Reserve Limits. As explained earlier, the Federal Reserve historically permitted very little involvement by bank holding companies in physical commodities markets.[2413] Then in 1999, the Gramm-Leach-Bliley Act created a new category of "financial holding companies" and authorized them to engage in complementary, grandfathered, and merchant banking activities that could include physical commodities. The Federal Reserve responded by broadening the physical commodity activities that bank holding companies could conduct.[2414]

For a financial holding company to engage in complementary activities, it must first obtain permission from the Federal Reserve. Beginning in 2000, the Federal Reserve authorized over a dozen financial holding companies to engage in "complementary" activities involving physical commodities.[2415] In the orders and letters granting that complementary authority, the Federal Reserve typically noted that the intent of the Gramm-Leach-Bliley complementary provision was "to allow the [Federal Reserve] Board to permit FHCs [financial holding companies]" to engage in the specified commercial activities "on a limited basis."[2416]

The Federal Reserve also imposed a number of limitations on the financial holding companies receiving complementary authority. One key limitation stated that, "to limit the potential safety and soundness risks of Commodity Trading Activities," the "market value of commodities held" by the financial holding company "must not exceed 5 percent" of the financial holding company's "consolidated tier 1 capital."[2417] In addition, the financial holding company was required to notify the Federal Reserve if the market value of its physical commodities "exceeds 4 percent of its tier 1 capital."[2418] The Federal Reserve imposed that same volume limit and reporting requirement on all of the financial holding companies given complementary authority to engage in physical commodity activities.[2419]

A later internal Federal Reserve memorandum described the twin objectives of the 5% limit as:

[2413] See discussion in Chapter 2, above, on the history of bank involvement with physical commodities.
[2414] See discussion in Chapter 3, above, describing Federal Reserve actions after the 1999 Gramm-Leach-Bliley Act.
[2415] See discussion in Chapter 3 above, describing the Federal Reserve grants of complementary authority to financial holding companies from 2000 to 2009.
[2416] See, e.g., 11/18/2005 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by JP Morgan Chase & Co., 92 Fed. Res. Bull. C57 - C59, at C57 (2006) (hereinafter, "2005 JPMorgan Complementary Order"), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_2006comp_p2.pdf.
[2417] Id. at C58.
[2418] Id.
[2419] See citations to the individual orders in Chapter 3. Neither Goldman nor Morgan Stanley has ever requested or received a complementary order; they rely instead on other authorities, including the Gramm-Leach-Bliley grandfather and merchant banking authorities, to conduct their physical commodity activities.

"intended to both limit the level of activity that 'appears commercial in nature' and to address safety and soundness concerns related to non-traditional risk from industrial commodities activities."[2420]

Physical commodity activities undertaken as complementary activities were not the only activities subject to limits. In addition, the Gramm-Leach-Bliley Act imposed a limit on the physical commodity activities that could be undertaken by firms that converted to bank holding companies under the so-called "grandfather clause."[2421] The statute specified that physical commodity activities undertaken through the grandfather clause had to be limited to "not more than 5 percent of the total consolidated assets of the bank holding company."[2422] In addition, the statute authorized financial holding companies to engage in "merchant banking" activities which, among other types of business, could include physical commodity activities.[2423] Initially, the Federal Reserve imposed a limit on the overall size of merchant banking activities, generally capping them at no more than 30% of the financial holding company's Tier 1 capital, but that cap was removed more than a decade ago.[2424] Since then, physical commodity activities undertaken pursuant to the merchant banking provision have operated with no size limit at all.

Each of the size limits imposed on financial holding company involvement with physical commodities was intended, in part, to reduce the safety and soundness risks associated with those activities. The Federal Reserve, however, has not issued any written guidance on how each of the limits should be applied, or how they should be integrated so that they work together efficiently and effectively. Nor, until recently, did the Federal Reserve impose routine reporting requirements to determine whether financial holding companies were appropriately valuing their physical commodity assets and accurately reporting compliance with the 5% limit.[2425] Instead, the Federal Reserve essentially relied on its examiners and the financial holding companies themselves to ensure the complementary, merchant banking, and grandfathering limits were implemented in appropriate ways.

OCC Limits. A second set of limits on physical commodity activities was imposed by the OCC, which regulates federally-insured national banks, in contrast to the bank holding companies regulated by the Federal Reserve.

Like bank holding companies, federally-chartered banks have historically held inventories of precious metals, such as gold or silver, but not other types of physical commodities in any significant quantities. In 1993, the OCC significantly altered this landscape

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[2420] Undated but likely the second half of 2013 memorandum, "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 301 [sealed exhibit].
[2421] See discussion in Chapter 3, above, regarding the grandfather clause.
[2422] See Gramm-Leach-Bliley Act, §103(a).
[2423] See discussion in Chapter 3, above, regarding merchant banking authority.
[2424] See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds); Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy, Guidelines; Capital Maintenance: Nonfinancial Equity Investments, 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).
[2425] While the Federal Reserve has long had access to, and general reporting regarding, financial holding companies' commodities activities, the specifics regarding compliance with applicable size limits, were not, until recently, regularly provided to the regulators.

when it issued an Interpretive Letter that deemed it permissible for national banks to hedge their commodity-linked derivative transactions by taking or making delivery of physical commodities, subject to certain limitations.[2426] Two years later, in 1995, the OCC broadened and clarified this new physical commodity hedging authority with another Interpretive Letter.[2427] The OCC explicitly limited this hedging authority by imposing a number of requirements and restrictions, including that the authorized transactions needed to be:

- "nominal," and that "no more than 5% of its total transactions involving Eligible Commodities would involve actual physical delivery;"
- "Hedge Transactions" used to "manage risk" arising out of permissible commodity-linked financial transactions;
- made only with "Eligible Commodities," meaning physical metals that were not deemed to be bullion and coin, including aluminum, copper, lead, nickel, tin, zinc, cobalt, platinum, iridium, palladium, and rhodium;[2428]
- "customer-driven;" and not "entered into for speculative purposes."[2429]

The Interpretive Letter did not detail how the specified limitations and safeguards were to be implemented. For example, the letter did not detail how the 5% limit should be calculated or applied. In addition, since 1995, the OCC has not issued any formal guidance on its 5% limit, nor, until recently, required regular reporting on compliance with it. Instead, similar to the Federal Reserve, until very recently, the OCC essentially relied on its examiners and the financial holding companies themselves to implement the limit in an appropriate way.

(2) JPMorgan Aggressive Interpretations

JPMorgan and JPMorgan Chase Bank have both, over the years, employed aggressive interpretations and practices when complying with the regulatory size limits.[2430] JPMorgan, which exercised a wide range of complementary activities involving physical commodities, was subject to the Federal Reserve's 5% limit. JPMorgan Chase Bank, which conducted a large amount of physical commodities activities involving primarily physical metals like aluminum and copper, was subject to the OCC's separate 5% limit. From 2005 to 2012, despite those purported size limits, JPMorgan accumulated massive physical commodity holdings far in excess of 5% of its Tier 1 capital.

[2426] OCC Interpretive Letter No. 632 (6/30/1993), PSI-OCC-01-000358 - 366.
[2427] OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374.
[2428] Id. Three months later, the OCC issued another Interpretive Letter allowing banks to treat copper as "bullion," which effectively excluded copper from the 5% limit imposed by the OCC. See OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141.
[2429] OCC Interpretive Letter No. 684 (8/4/1995), PSI-OCC-01-000368 - 374. The OCC also prohibited the bank from being a "dealer or market-maker" in the physical commodity transactions; required the bank to "take delivery by accepting warehouse receipts or simultaneous 'pass-through' delivery to another party;" and precluded the bank from taking "a net position" in the commodities. Id.
[2430] In this section, unless otherwise indicated, "JPMorgan" refers to the holding company, JPMorgan Chase & Co., while "JPMorgan Chase Bank" refers to its primary national bank subsidiary.

JPMorgan and JPMorgan Chase Bank claimed to be in compliance with the Federal Reserve and OCC size limits, despite the actual size of their physical commodity holdings, by excluding and minimizing the value of various assets when calculating the market value of their respective holdings. Until 2012, both regulators had largely relied on JPMorgan and JPMorgan Chase Bank to track their own compliance and report any breaches of the regulatory limits. When the regulators learned of their aggressive interpretations and practices in connection with the limits, they disallowed some, while allowing others to continue.

JPMorgan's compliance practices came into the spotlight in late December 2011, when JPMorgan Chase Bank engaged in a massive physical commodities transaction, involving $1.6 billion in aluminum, and breached the OCC's limit. To bring the bank back into compliance with the OCC limit, the bank "sold" about $1.1 billion in aluminum to a nonbank affiliate of the JPMorgan holding company, JPMorgan Ventures Energy Corporation (JPMVEC). JPMorgan informed the Federal Reserve that it had exceeded the 4% reporting threshold for physical commodities, but would not exceed the 5% limit. That transaction led to both Federal Reserve and OCC examiners asking questions about the compliance of both JPMorgan and JPMorgan Chase Bank with their respective size limits. The Federal Reserve examiners learned for the first time that the financial holding company had not been including the value of its bank's physical commodity assets when reporting the market value of it physical commodity holdings to the Federal Reserve. The OCC examiners learned that the bank had earlier exceeded the OCC limit without disclosing the breach to OCC examiners, and then remained in breach of the limit, ultimately for about a month.

The Federal Reserve and OCC examiners also learned that, when the physical commodity assets of the financial holding company and bank were combined, they far exceeded 5% of the financial holding company's Tier 1 capital, and had exceeded that level in every month of 2011. JPMorgan and JPMorgan Chase Bank nevertheless asserted they were in full compliance with both the Federal Reserve and OCC 5% limits, except for the one-month period, because they could use exclusions and other valuation techniques that brought down the value of their respective assets to below the regulatory limits. Despite concerns expressed by Federal Reserve and OCC examiners about JPMorgan's excluding its bank's assets when calculating the financial holding company's physical commodity holdings, the Federal Reserve legal department has so far declined to object to JPMorgan's approach.

(a) Making Commitments

In 2004 and 2005, JPMorgan and JPMorgan Chase Bank sought expanded authority to engage in physical commodity activities from their respective regulators. To obtain that authority, both made commitments to comply with the size limits designed to reduce the associated risks.

2004 JPMorgan Chase Bank Commitments to the OCC. In 2004, as its merger with Bank One was being finalized, JPMorgan Chase Bank sent a letter to the OCC essentially alerting it to the physical commodity activities then taking place within the bank, and seeking confirmation that those activities were permissible. The JPMorgan Chase Bank letter stated:

> "The purpose of this letter is to provide you with information regarding the Bank's current commodity derivative activities and to request the Office of the Comptroller of the Currency's (the 'OCC') concurrence with our view that entering into (1) cash-settled derivative transactions in natural gas, crude oil, power, coal, emissions and weather, (2) physically-settled transactions in the form of transitory title transfers in natural gas, crude oil, power, emissions and coal, including volumetric production payment transactions, and (3) physical commodity transactions in natural gas, crude oil, coal and emissions, all as described more fully below, is permissible for a national bank."[2431]

To persuade the OCC to support continuation of its physical commodity activities, in its letter JPMorgan Chase Bank made a number of commitments, including that: (1) all of its commodity related transactions would be to assist customers, and not for purposes of speculation; (2) it would establish comprehensive risk management practices and policies; and (3) when the bank took delivery of physical commodities, it would act as a financial intermediary and that "taking delivery of a physical commodity should be incidental to such financial intermediation."[2432] JPMorgan told the Subcommittee that the bank never received a specific written response from the OCC, but its understanding was that the activities described in its letter were, in fact, permissible.[2433]

2005 JPMorgan Commitments to the Federal Reserve. Nine months after JPMorgan Chase Bank sent the letter to the OCC, its holding company, JPMorgan, sent one to the Federal Reserve applying for complementary authority to engage in physical commodity activities through the financial holding company.[2434] The letter asked that JPMorgan be allowed to "expand its commodities derivatives activities to include physical transactions in the natural gas, crude oil and emissions allowance markets" through an affiliate, JPMorgan Ventures Energy Corporation (JPMVEC).[2435] The letter indicated that JPMVEC's "front office" employees would also be employees of JPMorgan Chase Bank, and the bank would also supply administrative and operational support for JPMVEC.[2436] JPMVEC would then execute commodity trades for both the bank and the holding company.

The letter requested complementary authority that would allow JPMorgan, through JPMVEC, to trade as a principal using commodity-related futures, swaps, options, forwards, and similar contracts.[2437] The letter indicated that, if given the authority, in many cases, JPMorgan would either settle the contracts on a financial basis (without making or taking physical delivery of the commodities) or use paperwork to take legal title to the physical commodities and transfer that title "instantaneously" to a third party.[2438] The letter also stated that, in other cases,

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[2431] 10/26/2004 letter from JPMorgan legal counsel to OCC, "Commodity Derivative Activities of JPMorgan Chase Bank," OCC-PSI-00000266 - 298, at 266.
[2432] Id. at 267.
[2433] Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014). However, the OCC subsequently engaged the bank in extended discussions, some of which resulted in the OCC providing numerous Interpretive Letters to the bank during 2005 and 2006. Subcommittee briefing by OCC (11/14/2014).
[2434] 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 000028.
[2435] Id. at 007 (internal citations omitted).
[2436] Id. at 012.
[2437] Id. at 009.
[2438] Id.

JPMorgan would take legal title to physical commodities for "a relatively short period of time."[2439] In addition, the letter stated that JPMorgan "d[id] not expect to own, control or operate entities in the Unites States that are involved in the production, distribution, storage or processing of physical commodities for the purposes of engaging in those activities."[2440]

JPMorgan's 2005 letter to the Federal Reserve also made a number of specific commitments if it were granted expanded authority to conduct physical commodity activities. They included commitments that JPMorgan would:

- "limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital," a limit which, for reference purposes, it estimated was about $3.5 billion on December 31, 2004, based on JPM Chase Tier 1 capital at that time of $69.4 billion;[2441]
- "assure proper risk management and controls over the [physical commodity activities]";[2442]
- "make and take physical delivery of, or store, only commodities, such as natural gas, crude oil, and emissions allowances, that have been approved by the CFTC for trading on U.S. futures exchanges";[2443]
- "not acquire or operate facilities in the Unites States for the extraction, transportation, storage or distribution of commodities. … [but if JPMorgan nevertheless ended up owning such a facility] JPMorgan will not hold any such interest as a means to engage in the underlying commercial activity";[2444]
- "not process, refine, store or otherwise alter commodities in the United States";[2445]
- "contract with a third party for any services that it needs in connection with the handling of any commodity";[2446] and
- "only use storage and transportation facilities owned and operated by third parties" and "enter into service agreements only with accredited, reputable independent third party facilities."[2447]

[2439] Id.

[2440] Id. at 020. Five years later, as part of its RBS Sempra acquisition, JPMorgan acquired the Henry Bath warehouses, which were plainly engaged in the storage of physical commodities. While the Federal Reserve gave JPMorgan an initial grace period to operate the warehouse company, it did not provide complementary authority or agree that JPMorgan could use merchant banking authority to retain ownership of the company. In 2014, JPMorgan sold Henry Bath to a third party. For more information, see discussion of Henry Bath in Chapter 3, above.

[2441] Id. at 026. Tier 1 capital is generally comprised of "equity capital and published reserves from post-tax retained earnings" and is a "principal form of eligible capital to cover market risks." 6/2006 "International Convergence of Capital Measurement and Capital Standards: A Revised Framework Comprehensive Version," prepared by the Basel Committee on Banking Supervision, 1 - 333, at 14 and 16. http://www.bis.org/publ/bcbs128.pdf.

[2442] 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," at PSI-FederalReserve-01-000004 - 028, at 026.

[2443] Id.

[2444] Id. at 027.

[2445] Id. Four years later, in response to its request, JPMorgan obtained complementary authority to engage a third party to conduct those activities on its behalf. See 4/20/2009 letter from the Federal Reserve to JPMorgan, PSI-FRB-11-000001 - 002, at 001 [sealed exhibit] (allowing it to "engage a third party to alter or refine commodities after JPM takes delivery in connection with its Physical Commodity Trading").

[2446] 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," at PSI-FederalReserve-01-000004 - 028, at 027.

JPMorgan was one of the first financial holding companies to apply for complementary authority to engage in physical commodity activities.[2448] The Federal Reserve granted its request on November 18, 2005.[2449] In the order granting the new authority, the Federal Reserve wrote that it was authorizing JPMorgan to engage in the new activities "on a limited basis."[2450] The order also stated:

> "As a condition of this order, to limit the potential safety and soundness risks of Commodity Trading Activities, the market value of commodities held by JPM Chase as a result of Commodity Trading Activities must not exceed 5 percent of JPM Chase's consolidated tier 1 capital. JPM Chase also must notify the Federal Reserve Bank of New York if the market value of commodities held by JPM Chase as a result of its Commodity Trading Activities exceeds 4 percent of its tier 1 capital."[2451]

The order was also "specifically conditioned on compliance with all the commitments" JPMorgan had made in its application.[2452]

(b) Expanding Its Physical Commodity Activities

As described earlier, JPMorgan used its new complementary authority to engage in a wide range of physical commodity activities. JPMorgan's expansion into physical commodities was fueled, in part, by a handful of major acquisitions as well as an agreement with a major refinery. In 2008, through its Bear Stearns acquisition, JPMorgan gained rights to, or ownership interests in, 27 power plants and a host of energy-related assets, including pipeline and storage leases.[2453] In 2009, through a UBS acquisition, JPMorgan obtained crude oil, natural gas, power, and agricultural assets in Canada.[2454] In 2010, as part of a $1.6 billion RBS Sempra acquisition, JPMorgan obtained global oil, natural gas, coal, and metal assets; European power and gas assets; and the Henry Bath network of warehouses.[2455] In 2012, JPMorgan entered into a long-term agreement with a large oil refinery in Philadelphia, in which it agreed to supply crude oil and feedstocks to the refinery and purchase 100% of its refined oil products.[2456]

According to internal OCC and Federal Reserve analyses, in September 2012, JPMorgan's physical commodity assets reached an all-time high.[2457] JPMorgan's own records show that, in 2012, its physical commodity inventories were substantial. By 2013, JPMorgan had begun to prepare quarterly charts for its regulators that tracked its physical commodity

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[2447] Id.
[2448] Only Citibank preceded it, receiving the first grant of complementary authority from the Federal Reserve in 2003. See 10/2/2003 Federal Reserve "Order Approving Notice to Engage in Activities Complementary to a Financial Activity," in response to a request by Citigroup, Inc., 89 Fed. Res. Bull. 508 - 511 (12/2003), http://fraser.stlouisfed.org/docs/publications/FRB/2000s/frb_122003.pdf.
[2449] See 2005 JPMorgan Complementary Order, 92 Fed. Res. Bull. C57 - C59.
[2450] Id. at C57.
[2451] Id. at C58.
[2452] Id. at C59.
[2453] See discussion in the JPMorgan Overview, above, regarding the Bear Stearns acquisition.
[2454] See discussion in the JPMorgan Overview, above, regarding the UBS acquisition.
[2455] See discussion in the JPMorgan Overview, above, regarding the RBS Sempra acquisition.
[2456] See discussion in the JPMorgan Overview, above, regarding Project Liberty.
[2457] See email from OCC staff to FRBNY staff, "Meeting?," OCC-PSI-0000077 - 079; 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].

holdings and compared their market value to its Federal Reserve and OCC size limits. In September 2013, JPMorgan prepared a chart for its regulators that included information about its physical commodity holdings as of September 28, 2012, and compared those holdings to its Tier 1 capital as of that date, which was about $148 billion.[2458]

The chart first provided data on the physical commodity holdings of JPMorgan, the financial holding company. It showed that, as of September 28, 2012, the market value of the "Physical Inventory" held by the financial holding company – referred to as "JPMVEC & Non Bank Subs" – was about $6.6 billion, or about 4.5% of the financial holding company's Tier 1 capital of $148 billion.[2459] That $6.6 billion total excluded, however, several major categories of physical commodity holdings at the financial holding company, including all of the physical commodities held by its national bank, all of the financial holding company's gold, silver, platinum, palladium, and copper assets, and all of the financial holding company's physical commodities held through an exercise of its merchant banking authority.[2460] The result was that the $6.6 billion total reflected only a portion of the physical commodity assets actually held by the financial holding company.

The chart also provided data on the physical commodity holdings of JPMorgan Chase Bank. It showed that, on the same date, September 28, 2012, the market value of the "Base Metals" inventory held by JPMorgan Chase Bank was approximately $8.1 billion.[2461] That total suggested that the bank held a larger inventory of physical commodities than the entire financial holding company. At the same time, that $8.1 billion total also excluded certain categories of assets at the bank, including its gold, silver, platinum, palladium, and copper holdings. In response to a Subcommittee request, JPMorgan also provided separately, as of September 28, 2012, the total market value of the bank's copper, platinum, and palladium inventories, which together totaled about $2.7 billion.[2462]

When the financial holding company's physical commodities inventory of $6.6 billion is added to the bank's metals inventory of approximately $8.1 billion – still excluding gold, silver, and all merchant banking commodity assets – and the bank's copper, platinum, and palladium inventories of $2.7 billion are added in as well, the total market value of JPMorgan's combined physical commodity inventories on September 28, 2012, was $17.4 billion. That $17.4 billion was about 11.75% of the financial holding company's Tier 1 capital of $148 billion, which meant that it was more than twice the size allowed by the Federal Reserve's 5% limit, were it to apply.

[2458] 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387. See also 2012 excel spread sheet, "Physical Inventory Limit Monitor-9.17.12_Final.xlsx," prepared by the OCC, OCC-PSI-0000080 (stating that, in 2012, JPMorgan had Tier 1 capital of $148 billion).

[2459] 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301383 - 396, at 387; Subcommittee briefing by JPMorgan (10/10/2014).

[2460] Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).

[2461] 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301382 - 396, at 387.

[2462] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, at attachment, JPM-COMM-PSI-000049 (indicating that, on September 28, 2012, JPMorgan Chase Bank held $1.13 billion worth of physical copper, $872 million worth of physical platinum, and $656 million worth of physical palladium for a total market value of $2.7 billion).

The information provided by JPMorgan indicates that the size of its physical commodity holdings were actually far in excess of the 5% regulatory limits that were created to reduce the risks associated with those assets. JPMorgan told the Subcommittee, however, that it was in full compliance with all of its regulatory limits, because it was allowed to exclude whole categories of assets, including its bank's assets, under its interpretation of those limits.[2463] The Federal Reserve told the Subcommittee that, after researching the issue, it had not yet objected to JPMorgan's interpretation of the Federal Reserve's 5% limit on complementary activities, because it was a possible interpretation that would, in fact, allow the financial holding company to exclude many of its physical commodity assets.[2464] That JPMorgan could be found to be in compliance with a 5% limit at the same time the actual market value of its physical commodity assets totaled nearly 12% of its Tier 1 capital demonstrates how the Federal Reserve's regulatory limit, as currently enforced, has become riddled with exclusions and ineffective in capping the size of a financial holding company's physical commodity holdings.

(c) Stretching the Limits

For years, JPMorgan and JPMorgan Chase Bank have applied aggressive interpretations to stretch the size limits imposed by the Federal Reserve and OCC on the amount of physical commodities they are allowed to hold. To stay under the limits, they have routinely excluded assets and minimized the value of others. Some of these interpretations were known to the regulators; others were not. As a result of these efforts, JPMorgan often held physical commodities assets whose combined market value far exceeded 5% of its Tier 1 capital.

From 2005, when it received its first complementary order, until early 2012, Federal Reserve examiners appear to have been largely unaware of how JPMorgan was calculating its compliance with the Federal Reserve's 5% limit. It was not until 2012 that Federal Reserve Bank of New York (FRBNY) examiners learned that, for over six years, JPMorgan had been excluding all of the commodities held in JPMorgan Chase Bank when calculating the market value of its commodity holdings for purposes of the Federal Reserve's 5% limit.[2465] JPMorgan had excluded its bank's holdings despite the financial holding company's having committed to "limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital," with no express caveat for bank assets.[2466] After learning of JPMorgan's exclusion, despite concerns expressed by its examiners, the Federal Reserve has yet to require JPMorgan to include its bank's assets when valuing the physical commodities held by the financial holding company.

Similarly, from 1995 until early 2012, the OCC appears to have been unaware of how JPMorgan Chase Bank calculated its compliance with the OCC's 5% limit. Beginning in 2012,

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[2463] Subcommittee briefing by JPMorgan (10/10/2014).
[2464] Subcommittee briefings by Federal Reserve (10/8/2014) and OCC (9/22/2014).
[2465] Subcommittee briefings by the Federal Reserve (12/13/2013) and (10/8/2014).
[2466] 7/21/2005 letter from JPMorgan legal counsel to Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028, at 026. Again, the complementary order was "specifically conditioned on compliance with all the commitments made to the Board." 11/18/2005 "JPMorgan Chase & Co. New York, New York Order Approving Notice to Engage in Activities Complementary to a Financial Activity," Federal Reserve website, at 7, http://www.federalreserve.gov/boarddocs/press/orders/2005/20051118/attachment.pdf.

as the OCC examined the bank's practices more closely, it issued a series of supervisory letters criticizing and disallowing some of those practices, as explained below. In response, JPMorgan Chase Bank agreed to change those practices and also recently sold much of the physical metals inventory that had been held in the bank's name. Today, JPMorgan asserts that both the bank and holding company continue to be in full compliance with the Federal Reserve and OCC size limits.

Excluding Bank Assets. Perhaps the most striking aspect of JPMorgan's approach to the size limits is its assertion that it can exclude all of its bank's extensive physical commodity holdings when reporting to the Federal Reserve on the total market value of the financial holding company's physical commodity assets. Since 2005, when it was first granted complementary authority by the Federal Reserve to conduct physical commodity activities, JPMorgan has been under an obligation to keep the market value of its physical commodity assets below 5% of its Tier 1 capital and to report to the Federal Reserve any instance in which those assets exceeded 4% of its Tier 1 capital. Normally, a financial holding company's assets include the assets of its bank subsidiaries, since they are typically the largest, and may be the only, subsidiaries of the holding company. Yet since 2005, JPMorgan has apparently never included the physical commodities held by JPMorgan Chase Bank when calculating the market value of the financial holding company's physical commodity assets for purposes of complying with the Federal Reserve's 5% limit.[2467]

The Federal Reserve told the Subcommittee that it first learned of JPMorgan's practice in early 2012.[2468] Internal documents from the Federal Reserve, OCC, and JPMorgan chronicle what happened. The precipitating event came in January 2012, when JPMorgan reported to the Federal Reserve Bank of New York (FRBNY) that its physical commodity assets had recently exceeded 4% of its Tier 1 capital, the reporting threshold established in its 2005 complementary order.[2469] According to the Federal Reserve and contemporaneous documents, when the FRBNY examiners asked JPMorgan what caused the increase in the market value of its physical commodity assets, JPMorgan indicated that, on or around December 21, 2011, JPMorgan Chase Bank purchased about $1.9 billion of physical aluminum on behalf of a client.[2470] JPMorgan told the Subcommittee that, as a result, the bank's total physical aluminum holdings on that date rose to $6.5 billion.[2471] A few weeks later, on January 10, 2012, JPMorgan Chase Bank's

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[2467] Subcommittee briefing by Federal Reserve (10/8/2014).
[2468] Id.
[2469] 2/15/2012 email from FRBNY Staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049.
[2470] Subcommittee briefing by the Federal Reserve (12/13/2013); 2/15/2012 email from FRBNY Staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049. JPMorgan legal counsel described the transaction to the Subcommittee as a swap in which JPMorgan "(1) delivered contracts for approximately 860,000 tons of aluminum to [its customer], (2) paid [the customer] a locational premium of ten million dollars, and (3) received from [the customer] warrants for approximately 860,000 tons of aluminum in Vlissingen." 10/30/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-17-000001 - 003, at 002. JPMorgan legal counsel also indicated that the correct total for the transaction was $1.68 billion, rather than $1.9 billion reported at the time; the discrepancy between the two numbers is not explained. 11/5/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-22-000001 - 004, at 001.
[2471] 11/10/2014 email from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-23-000001 - 006, at 001.

aluminum inventory peaked at "3,501,365 metric tonnes," which JPMorgan estimated had "a total value of approximately $7.48 billion."[2472]

Those enormous holdings put the bank over the OCC's size limit, so to get back under the limit, the bank decided to sell a large amount of the aluminum to JPMorgan Ventures Energy Corporation (JPMVEC), an affiliate of the financial holding company.[2473] Emails between regulators indicate that, a month later, as of January 24, 2012, the bank's physical aluminum holdings had decreased in value to $4.9 billion.[2474] According to an internal Federal Reserve email at the time, JPMorgan told FRBNY examiners that nearly 80% of the aluminum at issue – purportedly worth $3.8 billion – would continue to be held by JPMorgan Chase Bank, while about $1.1 billion in aluminum would be sold to JPMVEC a subsidiary of the financial holding company, which meant JPMorgan would have to add it to the physical commodity assets subject to the Federal Reserve's 5% limit.[2475] According to JPMorgan, the additional aluminum put the financial holding company's assets over the 4% reporting threshold, which was why JPMorgan had notified the Federal Reserve Bank of New York.[2476]

According to Federal Reserve emails, when JPMorgan informed its FRBNY examiners about the details of the aluminum trade, it marked the first time that the FRBNY examiners discovered that JPMorgan was not "reporting the full balance of its aluminum inventory for compliance with the 5% of Tier 1 capital rule, but rather only the portion that is held in non-bank affiliates."[2477] Upon further inquiry, the FRBNY examiners learned that, during 2011, JPMorgan's physical commodities holdings, when the bank's assets were included (but excluding bullion), had ranged from $8.9 billion to $14.4 billion, and exceeded 5% of JPMorgan's Tier 1 capital in every month of the year.[2478] The FRBNY examiners were told that, as of February 2012, JPMorgan's total physical inventory (excluding bullion) was "$12.4 billion,

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[2472] Id. at 001. At 3.5 million metric tons, JPMorgan Chase Bank's aluminum holdings were so large that they exceeded more than half of the physical aluminum consumed in North America that year. See undated "Primary Aluminum Consumption, 2011-2013," European Aluminum Association website, http://www.alueurope.eu/consumption-primary-aluminium-consumption-in-world-regions/ (indicating North American primary aluminum consumption in 2012 was 5.3 million metric tons).

[2473] Subcommittee briefings by the Federal Reserve (12/13/2013) and JPMorgan (10/10/2014); 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049, at 049.

[2474] 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831. It is unclear how the value of the bank's aluminum holdings dropped from $7.48 billion to $4.9 billion, a difference of $2.58 billion, over the course of that month.

[2475] 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831. JPMorgan legal counsel has indicated that the correct value of the aluminum sold to JPMVEC was $921 million rather than $1.1 billion, writing that, on January 19, 2012, JPMorgan Chase Bank sold, "in an arms-length, at-market transaction, 419,400 metric tonnes of aluminum to JPMVEC at $2,196.75 per metric tonne, or approximately $921 million." 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 001 - 002. The discrepancy between the $921 million reported to the Subcommittee in the November 2014 letter and the $1.1 billion reported to the Federal Reserve in 2012, is not explained.

[2476] Subcommittee briefing by JPMorgan (10/10/2014).

[2477] Id. See also Subcommittee briefings by the Federal Reserve (12/13/2013) and (10/8/2014) (confirming Federal Reserve examiners first learned of the exclusion in 2012).

[2478] 2/17/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 827.

which would exceed their 5% of Tier 1 capital limit (~$7.5 bn) by about $5 billion if the limit were applicable."[2479]

The discovery that JPMorgan was excluding its bank's holdings when calculating its compliance with the Federal Reserve's 5% limit raised concerns among the FRBNY examiners that JPMorgan was either bypassing the limit or the limit itself was ineffective in ensuring safety and soundness. As one FRBNY examiner wrote in an email: "It strikes me that the 5% Tier 1 capital limit should apply to all activity (whether its conducted in a bank or non-bank) given that the limit is relative to the consolidated organization's [T]ier 1 capital."[2480]

JPMorgan told the Subcommittee that it discussed the aluminum trade in a meeting with the OCC on January 17, 2012.[2481] It was two days later, on January 19, 2012, that JPMorgan Chase Bank actually sold the 419,400 metric tons of aluminum to JPMVEC.[2482] On February 15, 2012, the FRBNY examiners raised the matter with their OCC counterparts who were already aware of JPMorgan's large aluminum trade[2483] and already analyzing how the new aluminum holdings in the bank affected the OCC's separate 5% limit.[2484] The OCC limit focused, not on Tier 1 capital, but on the percentage of derivative trades that resulted in the physical delivery of commodities to the bank. The FRBNY examiners learned that the OCC examiners had determined that the aluminum trade had caused JPMorgan Chase Bank to breach the OCC's 5% limit by a large margin over the course of a month, from December 21, 2011 through January 20, 2012, the day on which the aluminum transfer by the bank to JPMVEC settled.[2485]

When asked about these developments, JPMorgan told the Subcommittee that it reduced its holdings as quickly as it could, came back under the OCC's limit within 30 days, and never breached the Federal Reserve's separate 5% limit at all.[2486] JPMorgan explained to the Subcommittee that the bank's efforts to quickly reduce its aluminum holdings had been stymied, not only by the holidays, but also by a decline in the notional amount of outstanding derivatives held by the bank, which is the denominator for the OCC 5% calculation.[2487] JPMorgan told the Subcommittee that it had hedged nearly all of its aluminum position by selling forward contracts,

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[2479] Id. It is unclear whether these figures included the entire amount of aluminum then held by the bank and its holding company.
[2480] Id. at 829.
[2481] Subcommittee briefing by JPMorgan (10/10/2014).
[2482] 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001- 004, at 001 - 002.
[2483] Subcommittee briefing by the OCC (9/22/2014); 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049; 2/15/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC." FRB-PSI-200827 - 831, at 829.
[2484] 2/15/2012 email from FRBNY staff to OCC staff, "JP Commodities," OCC-PSI-00000047 - 049, at 048.
[2485] 8/1/2012 email from JPMorgan to OCC staff, "5% limit calculation method," OCC-PSI-00000324 (indicating the sustained breach of the OCC limit); 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002 (reflecting that the "transaction settled on January 20, 2012"). JPMorgan Chase Bank later attempted to change how it calculated compliance with the OCC limit, by using average holdings over a three or twelve month period, which would have minimized the impact of large trades like the aluminum trade in late 2011. That methodology was disallowed by the OCC. See discussion, below.
[2486] Subcommittee briefing by JPMorgan (10/10/2014).
[2487] 10/30/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-17-000001 - 003, at 002.

and thus had relatively small "net" aluminum positions that it could dispose of to reduce its overall holdings.[2488]

When asked about excluding the bank's assets when reporting the market value of the financial holding company's physical commodity assets to the Federal Reserve, JPMorgan explained that the Federal Reserve's 5% limit applied only to physical commodity holdings acquired as a result of complementary activities; that the bank did not and could not act under "complementary" authority since only financial holding companies could employ that authority; that the bank's activities took place under a separate grant of authority from the OCC to accept physical deliveries of commodities in a small percentage of derivatives trading transactions; and that the bank's physical commodity holdings were, therefore, separate from and not subject to the Federal Reserve's 5% limit.[2489]

JPMorgan also expressed surprise that the Federal Reserve had been unaware of its ongoing exclusion of the bank assets.[2490] A JPMorgan representative told the Subcommittee that, at some point in early 2010, she had a conversation with Federal Reserve personnel in Washington, D.C. that she thought indicated they "must have known there were metals in the bank."[2491] Federal Reserve representatives told the Subcommittee, however, that they were unaware of that earlier conversation, had been unaware of the financial holding company's practice, and it was clear that the examiners in New York first learned of the practice in connection with the aluminum transaction in 2012.[2492] The internal emails exchanged between the FRBNY and OCC examiners in early 2012 also indicate that JPMorgan's FRBNY examiners had been unaware of the exclusion prior to that time.

In early February 2012, the FRBNY examiners consulted with the Federal Reserve's legal department to determine whether JPMorgan was permitted to exclude its bank's physical commodity holdings when calculating the market value of its physical commodity assets for purposes of the 5% limit, on the theory that the bank's assets were held under "separate authority granted by the OCC ... rather than under FRB compl[e]mentary authority."[2493] The Federal Reserve legal department concluded that JPMorgan's interpretation was a possible interpretation of the limit and that it would not object to that interpretation.[2494] Despite that legal analysis, the FRBNY examination team remained "very concerned ... [with] not looking at the activity across the consolidated organization [because] [i]f we don't do that the limit strikes us as not very meaningful."[2495]

JPMorgan and the Federal Reserve told the Subcommittee that JPMorgan continues to exclude physical commodities held by JPMorgan Chase Bank when calculating the market value of the physical commodity assets held by the financial holding company.[2496] The Federal

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[2488] 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002.
[2489] Subcommittee briefing by JPMorgan (10/10/2014).
[2490] Id.
[2491] Id.
[2492] Subcommittee briefing by Federal Reserve (10/8/2014).
[2493] 2/1/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 831.
[2494] Id. at 828.
[2495] Id.
[2496] Subcommittee briefings by the Federal Reserve (10/8/2014) and JPMorgan (10/10/2014).

Reserve acknowledged to the Subcommittee that it typically looks at a bank holding company holistically, and includes all bank assets when evaluating the holding company's assets. The Federal Reserve told the Subcommittee that it was unable to identify any other instance in which, when calculating the assets held by the financial holding company, it excluded the assets of a subsidiary bank.[2497]

Excluding Other Assets. Bank assets were not the only assets JPMorgan excluded when calculating the market value of the financial holding company's physical commodity assets for purposes of complying with the Federal Reserve's 5% limit.

A second exclusion was its copper holdings. As indicated in the prior section, JPMorgan is an active trader of copper and, from 2008 to 2012, maintained physical copper inventories whose value ranged from $148 million to $2.7 billion, with holdings frequently in excess of $1 billion.[2498] JPMorgan told the Subcommittee that it did not include any of its copper holdings when calculating compliance with the Federal Reserve's 5% limit.[2499] JPMorgan explained to the Subcommittee that its physical copper was not only held by its bank, but it was also categorized as "bullion," and for both reasons could be excluded from its physical commodity holdings for purposes of complying with both the Federal Reserve and OCC limits.[2500] As indicated earlier, the OCC has treated copper as bullion for years.[2501] The Federal Reserve told the Subcommittee that it explicitly authorizes banks to deal in bullion, including copper, and as a result, a financial holding company could hold copper under that separate authority rather than under its complementary authority, and so exclude its copper holdings when calculating compliance with the Federal Reserve's complementary 5% limit.[2502] While excluding copper is permissible according to regulators, excluding billion-dollar copper inventories from regulatory size limits, despite copper's trading status as a base metal, and the risk that even small price decreases could dramatically lower the value of large holdings, seems to have little economic rationale from a safety and soundness perspective.

Still another exclusion that JPMorgan employed for two years involved the power plants it obtained through its Bear Stearns acquisition in 2008. At that time, among other physical commodity assets, JPMorgan acquired tolling agreements and ownership interests in 27 power plants.[2503] JPMorgan later put a market value on the tolling agreements with those and a few

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[2497] Subcommittee briefing by the Federal Reserve (10/8/2014).

[2498] See discussion above; attachment to 3/22/2013 letter from JPMorgan legal counsel to Subcommittee, JPM-COMM-PSI-000015 - 019, at 015; 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan, page entitled: "Key Risk Positions – as of June 28, 2013[:] Key Risk Positions in Bank," at FRB-PSI-301382 - 396, at 388.

[2499] Subcommittee briefing by JPMorgan (10/10/2014).

[2500] Id.

[2501] See OCC Interpretive Letter No. 693 (11/14/1995), PSI-OCC-01-000135 - 141 (defining copper as bullion). See 12 C.F.R. §225.28(b)(8)(iii) (stating that a permissible nonbank activity includes: "Buying, selling and storing bars, rounds, bullion, and coins of gold, silver, platinum, palladium, copper, and any other metal approved by the Board, for the company's own account and the account of others, and providing incidental services such as arranging for storage, safe custody, assaying, and shipment.").

[2502] 10/29/2014 email from the Federal Reserve to Subcommittee, "Outstanding requests," PSI-FRB-16-000001 - 002.

[2503] See discussion above; undated 2014 JPMorgan chart, "Power Plants Owned or Controlled via Tolling Agreements, 2008 to present," prepared by JPMorgan for the Subcommittee, JPM-COMM-PSI-000022 - 025.

other power plants in the range of $2 billion to $2.3 billion.[2504] In addition to the sheer size of those holdings, the normal practice at the time was for financial holding companies to include the market value of those types of power plant assets in their physical commodity holdings subject to the Federal Reserve's 5% limit. Despite those factors, JPMorgan excluded its power plant assets when calculating its compliance with the Federal Reserve's 5% limit for over two years.

Prior to the Bear Stearns acquisition in 2008, JPMorgan had never engaged in power plant activities or sought complementary authority to do so. As part of the Bear Stearns transaction, the Federal Reserve Bank of New York (FRBNY) gave JPMorgan a two-year grace period during which "any assets or activities acquired from Bear Stearns that JPMorgan is not currently permitted to own or engage in shall be treated as permissible assets or activities for a period of two years."[2505] That grace period applied to the 27 power plants, as part of the Bear Stearns acquisition. JPMorgan took the position that, for the next two years, it held the power plants under the authority of the FRBNY two-year grace period, and not under its complementary authority, and so could exclude them when calculating the market value of its physical commodity holdings subject to the Federal Reserve's 5% limit.[2506] JPMorgan took that position even though the FRBNY letter contained no language related to excluding the value of permissible assets from JPMorgan's physical commodity holdings.

JPMorgan held the Bear Stearns power plants from March 2008 to March 2010, without including their market value in its calculations of the total market value of its commodity holdings for purposes of the Federal Reserve's 5% limit. There is no indication that JPMorgan informed the Federal Reserve of its practice, or that the Federal Reserve inquired about the matter. On February 5, 2010, JPMorgan asked the Federal Reserve to extend the grace period for another year, and also explicitly requested permission to conduct its energy tolling and other power plant activities outside of the 5% limit.[2507] The Federal Reserve extended the grace period for one more year, until March 2011.

On June 30, 2010, the Federal Reserve issued a complementary order authorizing JPMorgan to conduct its power plant activities as complementary activities.[2508] At the same time, the Federal Reserve denied JPMorgan's request to exclude the value of its power plant assets when calculating compliance with the Federal Reserve's 5% limit, instead explicitly directing inclusion of the market value of its various power plant assets.[2509] It was only after the new complementary order was issued that JPMorgan began to include the value of its power plant

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[2504] See, e.g., 9/26/2013 "Fed/OCC/FDIC Quarterly Meeting," prepared by JPMorgan for a meeting with its regulators, FRB-PSI-301382 - 396, at 387.
[2505] 3/16/2008 letter from FRBNY to JPMorgan, FRB-PSI-19-000001 - 003, at 002 [sealed exhibit].
[2506] 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 003.
[2507] 2/5/2010 letter from JPMorgan legal counsel to the Federal Reserve, FRB-PSI-300286 - 290, at 286, 287 (stating: "[T]he Board has indicated that it has in the past subjected tolling activities of [financial holding companies] to the [5%] limit because tolling contracts expose the toller to the risk that the plant proves to be uneconomical to operate, which can occur when the cost of producing power is greater than the power's market price. However, given the competitive disadvantages that JPMC would suffer from having to manage its entire physical commodity and tolling activity under the [5%] limit, JPMC respect[fully] submits that the risks involved in tolling can be managed pursuant to robust risk management processes subject to regulatory examination.").
[2508] 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580.
[2509] Id. at 578 - 579.

assets when calculating its compliance with the Federal Reserve's 5% limit.[2510] The end result was that, for more than two years after acquiring the 27 Bear Stearns power plant interests, from March 2008 to July 2010, JPMorgan excluded their $2 billion value from its calculation of compliance with the Federal Reserve's 5% limit. Because the Federal Reserve never decided the issue, it is unclear whether JPMorgan's exclusion was permissible, and whether the same approach may be applied by JPMorgan or other financial holding companies when acquiring physical commodity assets that enjoy a two-year grace period before being required to conform with Federal Reserve requirements.

A third exclusion involved leases on oil and gas storage facilities. The FRBNY Commodities Team found that, while leases on power plants were included in the calculation of the market value of a financial holding company's physical commodity assets, some financial holding companies excluded "leases on infrastructure such as oil and gas storage facilities."[2511] A different Federal Reserve examination document noted that JPMorgan was "leasing oil and natural gas storage" as well as "oil tankers and pipeline capacity."[2512] JPMorgan told the Subcommittee that it normally excluded those types of infrastructure leases from its market value calculations for purposes of the 5% Federal Reserve limit.[2513] The Commodities Team stated in its 2012 Summary Report that it was "investigating [the] interpretation of the rule."[2514] The Federal Reserve told the Subcommittee that, currently, such leases are normally not included in the calculation of a financial holding company's physical commodity assets for purposes of the 5% limit.[2515] The Federal Reserve also noted that its Advanced Notice of Proposed Rulemaking raised questions about whether such leasing arrangements should be approved as complementary activities at all and solicited public comment on how to reduce the safety and soundness risks they present.[2516]

Reducing Asset Values. In addition to excluding assets, JPMorgan also used techniques to minimize the value of its assets when calculating the overall market value of its physical commodity holdings for purposes of complying with the Federal Reserve's 5% limit. In particular, it used two techniques to try to reduce the market value of its power plant assets, once it was required to include them in its overall physical commodity holdings. After the Federal Reserve learned that JPMorgan was using those techniques on its power plant assets, it disallowed them.

The first involved a netting practice. When JPMorgan began including power plant tolling agreements in its Federal Reserve calculation for the first time in 2010, it initially calculated the values on a "net" basis, which reduced their market value.[2517] According to

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[2510] Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).
[2511] 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].
[2512] Undated but likely in the second half of 2013 memorandum, "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 299 [sealed exhibit].
[2513] Subcommittee briefing by JPMorgan (4/23/2014).
[2514] 2012 Summary Report, at FRB-PSI-200477 - 510, at 506 [sealed exhibit].
[2515] 11/17/2014 email from Federal Reserve to Subcommittee, PSI-FRB-21-000001 - 002, at 002.
[2516] Id. See also Federal Reserve advance notice of proposed rulemaking, "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities," 79 Fed. Reg. 3329 (1/21/2014), http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/FR-2014-01-21.pdf.
[2517] Subcommittee briefings by JPMorgan (4/23/2014) and (10/10/2014).

JPMorgan, once the Federal Reserve learned of this practice, the regulator disallowed it.[2518] On July 5, 2011, JPMorgan raised the issue again, formally asking the Federal Reserve for permission to "exclude from its calculation of the 5% Limit the value of its rights under Energy Tolling agreements to the extent that JPM Chase has effectively assigned its rights ... to an unaffiliated third party."[2519] In other words, JPMorgan proposed that if it had a tolling agreement with a power plant, but then assigned or "re-tolled" that agreement to an independent third party, then JPMorgan could calculate the agreement's market value according to the netted revenues it would receive from the re-tolled agreement.[2520] JPMorgan noted that payments under a re-tolling agreement would "not necessarily offset dollar for dollar" the payments owed by JPMorgan under the original tolling agreement, and so proposed that it be allowed to net out the "present value of future committed receivables" from third parties against the payments owed by JPMorgan under the original tolling agreement.[2521] JPMorgan calculated that the netting technique would reduce the market value of its tolling agreements by about $300 million, from $2.3 billion to $2.0 billion.[2522]

The Federal Reserve denied JPMorgan's request to use netting when valuing its tolling agreements.[2523] An internal Federal Reserve memorandum reviewing JPMorgan examination issues explained: "FRB [Federal Reserve Board] denied this request for several reasons, including that permitting netting would have allowed the firm to enter into unlimited tolling agreements, which would have been inconsistent with the spirit of the 5% limit on physical activity."[2524] In other words, the Federal Reserve viewed the 5% limit as a way of limiting the amount of physical commodity activities that a financial holding company may conduct, and so opposed a netting arrangement that, in effect, would have removed the limit with respect to tolling agreements.

A second technique JPMorgan used involved reducing the market value of the "capacity payments" paid in connection with its power plants. The Federal Reserve has defined a "capacity payment" as a "fixed periodic payment that compensates the power plant owner for its fixed costs."[2525] When it received complementary authority to enter into tolling agreements in June 2010, JPMorgan committed to including "the present value of all capacity payments to be made by it in connection with energy tolling agreements in calculating its compliance with" the 5% limit.[2526] On July 5, 2011, JPMorgan asked to modify that commitment by excluding certain portions of the capacity payments, including "debt and equity payments associated with the power plant" and variable "operating" and "maintenance" expenses, so that a much smaller

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[2518] Id.
[2519] 7/5/2011 "Request to modify a commitment made by JPMorgan Chase & Co. in connection with its notice to, and approval by, the Federal Reserve to engage in energy tolling," prepared by JPMorgan and submitted to the Federal Reserve, FRB-PSI-300258 - 263, at 260.
[2520] Id.
[2521] Id. at 261.
[2522] Id.
[2523] Undated but likely in the second half of 2013 memorandum, "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 302 [sealed exhibit].
[2524] Id.
[2525] Undated but likely late 2010 or early 2011 JPMorgan memorandum, "CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit," FRB-PSI-300345 - 347, at 345.
[2526] Id. See also 6/30/2010 letter from the Federal Reserve to JPMorgan, FRB-PSI-302571 - 580, at 578.

portion of the capacity payments – reflecting only "fixed costs" – would count towards the 5% limit.[2527]

An internal JPMorgan document indicates that JPMorgan actually made that change in its valuation methodology in November 2010, without getting prior approval from regulators.[2528] According to projections by JPMorgan, the change potentially reduced the capacity payments that would count towards the cap from about $2.1 billion to about $560 million, a reduction of nearly 75%.[2529] In 2011, the Federal Reserve rejected the change in methodology, reasoning that capacity payments include the "total fixed periodic payments as specified in a tolling contract," not just the "fixed operating costs."[2530]

The Federal Reserve's rejection of JPMorgan's two techniques to lower the reported market value of its power plant assets represent rare occasions in which the Federal Reserve did not go along with JPMorgan's efforts to reduce the impact of the Federal Reserve's 5% limit.

Stretching the OCC Limit. Since 1995, the OCC has expressly prohibited a national bank from accepting or delivering physical commodities in more than 5% of its derivative transactions. Yet, from 1995 until 2012, it appears as though JPMorgan Chase Bank was largely unaware of the OCC's 5% limit, and may have even believed that it was 20%.[2531] JPMorgan Chase Bank also used aggressive interpretations and loopholes to reduce the impact of the OCC limit.

Among other measures, JPMorgan Chase Bank's actions included calculating the value of its metals inventory: (1) on a physical volume basis, meaning tracking metric tons, instead of tracking the dollar value of those tons; (2) on an aggregated basis, meaning applying the limit to the overall amount of its metals holdings instead of applying the limit on a metal-by-metal basis;[2532] and (3) on a total notional amount basis, meaning measuring the amount of the bank's derivatives holdings on a notional rather than net basis, which inflated the base against which the

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[2527] Undated but likely late 2010 or early 2011 JPMorgan memorandum, "CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit." FRB-PSI-300345 - 347, at 345. See also 3/3/2011 Federal Reserve document, "Resolved Issues," FRB-PSI-304601 - 604, at 604 (discussing "Tolling Calculation – Capacity Payment") [sealed exhibit].

[2528] Undated but likely late 2010 or early 2011 JPMorgan memorandum, "CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit." FRB-PSI-300345 - 347, at 345. See also Subcommittee briefing by JPMorgan (4/23/2014).

[2529] Undated but likely late 2010 or early 2011 JPMorgan memorandum, "CONFIDENTIAL - Methodology for Calculating Capacity Payments for Purposes of 5% Limit." FRB-PSI-300345 - 347, at 347; Subcommittee briefing by JPMorgan (4/23/2014). See also 2012 Summary Report, at FRB-PSI-200477 - 510, at 505 [sealed exhibit].

[2530] 3/3/2011 Federal Reserve document, "Resolved Issues," FRB-PSI-304601 - 604, at 604 (discussing "Tolling Calculation – Capacity Payment") [sealed exhibit]. See also 2012 Summary Report, at FRB-PSI-200477 - 510, at 505 [sealed exhibit].

[2531] See 1/25/2012 email from OCC staff to OCC staff, "Guidance on 5% rule," OCC-PSI-00000343-345 ("The bank used to believe it was 20% and I asked them to show me where they got that interpretation.").

[2532] See, e.g., 1/11/2012 email from Mark Lenczowski, JPMorgan, to OCC staff, "Consolidated OCC Summary 10 Jan 2012," OCC-PSI-00000336; 1/25/2012 email from OCC staff to OCC staff, "Guidance on 5% rule," OCC-PSI-00000343 - 345 (allowing aggregating) [sealed exhibit].

5% limit was applied.[2533] Taken together, these three interpretations rendered the OCC's 5% limit effectively meaningless as a risk management or prudential safeguard.[2534]

Additionally, JPMorgan Chase Bank attempted to replace the OCC's requirement to calculate the tonnage of physical assets held by the bank on a specific day, with using the average tonnage over a 12-month or 3-month rolling period, which would have allowed the bank to take delivery of more physical commodities overall.[2535] In addition to those calculation strategies, JPMorgan Chase Bank also omitted data on the bank's holdings of "base metals, investor products, and agricultural and soft commodities" from a report to the OCC on its physical commodity assets;[2536] and employed anticipatory and portfolio hedging tactics that stretched the permissible relationship between its physical commodity transactions and the derivative transactions they were supposedly hedging.[2537] The OCC has objected to some of those tactics, but has not registered objections to others.

In December 2011, JPMorgan Chase Bank made a transfer of approximately $1 billion in physical aluminum[2538] to JPMVEC, which was outside the bank, but run by many of the same employees. This transaction moved physical metal to the financial holding company, but did not act as a derivative hedge for the bank. As a result, it triggered more intensive reviews of the bank's conduct by the OCC.

Over the next three years, the OCC cited a number of concerns with how JPMorgan was complying with the agency's 5% limit. In March 2012, the OCC sent a Supervisory Letter to JPMorgan Chase Bank identifying significant control weaknesses and regulatory non-compliance in how the bank was conducting its commodity activities, including with respect to its implementation of the 5% limit.[2539] The OCC sent a followup Supervisory Letter in June 2013.[2540] In April 2014, after concluding an extensive analysis of JPMorgan Chase Bank's activities, the OCC found that the bank was "making or taking physical delivery of metal in connection with spot and forward transactions in a manner that [was] beyond the scope of metals

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[2533] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 006.
[2534] For example, a bank could still be in compliance with the OCC 5% limit if it held a long derivatives position for 1 million tons of aluminum that was offset by a short derivatives position for 999,999 tons of aluminum, but then had 99,000 physical tons of nickel, representing 5% of the total notional tonnage of derivatives. The net derivatives exposure in aluminum is just 1 ton, and yet it could be "hedged" with 99,000 tons of physical nickel. The OCC confirmed for the Subcommittee that this extreme example would be consistent with the 5% limit as currently applied. However, the OCC noted that the facts in this example may run afoul of other requirements set forth in the OCC's Interpretive Letters, such as the hedging requirement. Subcommittee briefing by the OCC (9/22/2014).
[2535] See, e.g., 1/10/2012 email from Michael Kirk, OCC, to Fred Crumlish, OCC, "GCG Exam, Bank seeks guidance on 5% rule," OCC-PSI-00000342; 2/15/2012 email from Mark Lenczowski, JPMorgan, to Michael Kirk, OCC, "5% Limit Calculation," OCC-PSI-00000324; 10/4/2012 email from Michael Kirk, OCC, to Fred Crumlish, OCC, "Mark Lenszowki Call on 5% rule," OCC-PSI-00000346 (disallowing averaging) [sealed exhibit].
[2536] See 6/27/2013 OCC Supervisory Letter JPM-2013-36, OCC-PSI-00000312 - 314 (citing 3/28/2012 OCC Supervisory Letter JPM-2012-13 (requiring corrected report) [sealed exhibit].
[2537] See 4/15/2014 OCC Supervisory Letter JPM-2014-23, OCC-PSI-00000315 - 320 [sealed exhibit].
[2538] While contemporaneous documents reflected the transaction as valued at $1.1 billion, JPMorgan legal counsel told the Subcommittee that the transaction was an "arms-length, at-market transaction" for "approximately $921 million." 11/5/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-19-000001 - 004, at 002.
[2539] See 3/28/2012 OCC Supervisory Letter JPM-2012-13, OCC-PSI-00000303 - 306 [sealed exhibit].
[2540] See 6/27/2013 OCC Supervisory Letter JPM-2013-36, OCC-PSI-00000312 - 314 [sealed exhibit].

activities authorized in OCC interpretive letters."[2541] In other words, the bank was engaging in physical spot market transactions, forward contracts, and swaps that were not clearly customer-driven or linked to hedging transactions, as required by OCC rules.

In May 2014, JPMorgan Chase Bank informed the OCC that it would cease the impermissible activities by July 1, 2015, and thereafter conduct them "in a subsidiary or affiliate of the Bank for which such activities are permissible" under Section 716 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.[2542] The bank further committed that, prior to July 1, 2015, it would keep its base metals "within the quantitative limits established by the OCC."[2543] On June 27, 2014, the OCC essentially accepted JPMorgan Chase Bank's proposal, giving JPMorgan more time to reconfigure its currently impermissible derivative and physical commodity activities.[2544]

(3) Issues Raised by JPMorgan's Involvement with Size Limits

JPMorgan's actions raise a number of concerns about the effectiveness of the existing Federal Reserve and OCC limits to assess and limit the size of physical commodity activities at banks and their holding companies. Those size limits were developed to promote the safety and soundness of banks and their holding companies, and protect U.S. taxpayers from physical commodity activities posing outsized financial, operational, and catastrophic event risks. The facts show that JPMorgan was able to reduce the impact of both sets of limits by using aggressive interpretations that, in some cases, took years for regulators to uncover and, in other cases, identified loopholes that the regulators have so far failed to close. Key issues include the ongoing exclusion of key assets when applying the limits, valuation methodologies that minimize the value of some assets, the absence of comprehensive, standardized reports to track compliance with the limits, and a current lack of coordination that, together, allow financial holding companies to amass billions of dollars in physical commodity holdings far in excess of 5% of its Tier 1 capital.

(a) Excluding Bank Assets

The 2005 order granting JPMorgan's complementary authority was explicitly conditioned upon JPMorgan's commitment to "limit the amount of physical commodities that it holds at any one time to 5% of its consolidated Tier 1 Capital."[2545] The order contains no caveat exempting JPMorgan's bank which, even in 2005, held billions of dollars in physical commodities. As far as the Subcommittee has been able to determine, JPMorgan is alone among financial holding companies in claiming that its obligation to limit the size of its physical commodity holdings excludes the physical commodities held by its bank. The Federal Reserve itself has been unable

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[2541] 4/15/2014 OCC Supervisory Letter JPM-2014-23, OCC-PSI-00000315 - 320, at 315 [sealed exhibit]. The OCC took exception, in particular, to JPMorgan Chase Bank's extensive activities in the spot markets for base metals.
[2542] 5/15/2014 letter from JPMorgan Chase Bank to OCC, "Supervisory Letter JPM-2014-23 (the "Letter")," OCC-PSI-00000321 [sealed exhibit].
[2543] Id. This pledge did not, however, include copper which remains exempt from the OCC's size limit.
[2544] 6/27/2014 letter from OCC to JPMorgan Chase Bank, "Management Response to SL JPM-2014-23, MRA Follow-Up," OCC-PSI-00000323 [sealed exhibit].
[2545] 7/21/2005, letter from JPMorgan counsel to the Federal Reserve Bank of New York, "JPM Chase Application for Compl[e]mentary Authority," PSI-FederalReserve-01-000004 - 028, at 026.

to identify for the Subcommittee any other instance in which it disregards a financial holding company's subsidiary bank when evaluating the size of the financial holding company's assets or when evaluating the financial holding company's compliance with a safety and soundness limitation on its holdings.

Disregarding the bank's physical commodity holdings is particularly inappropriate in the case of JPMorgan, since the same employees, working for JPMorgan Ventures Energy Corporation, execute physical commodity transactions on behalf of both the holding company and the bank.[2546] That arrangement has meant, on a practical level, that the holding company and its bank have long conducted their physical commodity activities in an integrated fashion, sharing personnel, support functions, and infrastructure. JPMorgan disclosed that arrangement when it sought complementary authority in 2005; there was no indicating then, nor was the Federal Reserve aware for the next seven years, that JPMorgan planned to exclude its bank's holdings when reporting the market value of its physical commodity assets for purposes of complying with the 5% limit.

The Federal Reserve and OCC's own examiners have expressed concern that excluding the bank's assets has rendered the 5% limit ineffective. One Federal Reserve examiner wrote that the examination staff was "very concerned ... [with] not looking at the activity across the consolidated organization [because] [i]f we don't do that the limit strikes us as not very meaningful."[2547] Another Federal Reserve examiner, in a communication with the OCC, noted the "mismatch" between allowing a financial holding company to use the Tier 1 capital amount for the entire "consolidated" group, but then exclude consideration of the substantial assets at the bank:

> "The FRS [Federal Reserve System] limit maintains that the firm cannot hold a market value of physical commodities and certain assets (e.g. tolling agreements) exceeding 5% of the consolidated organization's Tier 1 capital; the firm supplies a file each month showing physical commodity balances in relation to Tier 1 capital. Our lawyers [at the Federal Reserve] have told us that this limit only applies to the subsidiaries and not the national bank, which is under separate authority granted by the OCC. This creates something of a mismatch between numerator and denominator in the FRS limit as the numerator is only for the subsidiaries while the denominator is the entire firm. We realized this was more of an issue than previously known when the firm moved approx[imately] $1.8B[illion] of physical aluminum from the bank into the subsidiary (JPMVEC) for the stated reason of avoiding breaching the OCC limit of 5% of total transactions going to physical delivery, and thus saw that physical balances in the bank were more substantial than previously known. Thus, we thought it would be important to

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[2546] Id. at 012.

[2547] 2/15/2012 email from FRBNY staff to Federal Reserve staff, "aluminum inventory balances at JPMC," FRB-PSI-200827 - 831, at 828. See also 10/25/2012 email from OCC staff to Federal Reserve Staff, "Regulatory limit framework around physical commodities," FRB-PSI-624379 - 382, at 380 ("one partial solution to address fully consolidated concerns would be to have FRB clarify to include holdings on a consolidated basis.").

> understand how you implement IL [Interpretive Letter] 684 and jointly explore how we can ensure commodities are limited to the levels intended."[2548]

Emails from OCC examiners express similar concerns with excluding the bank's commodity holdings from the Federal Reserve's 5% limit.[2549]

The Federal Reserve's failure to object to JPMorgan's unusual interpretation of the 5% limit has allowed JPMorgan to exclude billions of dollars in physical commodities held at its bank when reporting the market value of its physical commodity assets to the Federal Reserve. The Federal Reserve's inaction may also act as an incentive for other financial holding companies to follow suit and locate physical commodities within their federally insured banks to avoid triggering the Federal Reserve limit, a development that would create more, rather than less, risk for U.S. taxpayers.[2550]

Excluding billions of dollars in bank assets when calculating the physical commodity holdings of the bank's holding company is contrary to the Federal Reserve's normal practice and creates an unbridgeable gap between its 5% limit and the actual physical commodity assets held by financial holding companies. In 2012, JPMorgan had $17.4 billion in physical assets representing nearly 12% of its Tier 1 capital, but was allowed to report to the Federal Reserve that it had only $6.6 billion in physical assets representing 4.5% of its Tier 1 capital. The reported figures were about one-third of the actual physical assets (excluding gold, silver, and commodity-related merchant banking assets) held by the financial holding company. The Federal Reserve should not permit or support that type of pretense. Instead, the Federal Reserve should employ its normal practice of viewing a financial holding company's assets holistically, and apply its limit accordingly.

(b) Excluding and Undervaluing Other Assets

JPMorgan's practice of excluding other assets from its physical commodities reporting, including the 27 Bear Stearns power plants, and oil and gas leases, as well as its methodology changes to lower the reported value of its tolling agreements and capacity payments, is evidence of a relationship in which the financial holding company was continually trying to find loopholes to reduce the impact of the safety and soundness limit on size put in place by the Federal Reserve. Federal Reserve examiners recognized the problem in a memorandum providing an overall analysis of JPMorgan's physical commodity activities:

> "Since 2006 the firm [JPMorgan] has significantly grown its physical activities, largely through acquisition, and joined the top tier (along with MS [Morgan Stanley] and GS [Goldman Sachs]) among banks in commodities. … Amid this growth, JPM has pressed on the boundaries of permissible activities including integrating merchant banking investments into trading activities and pursuing activity that may appear 'commercial in nature,' as well as pushed regulatory limits and their interpretation. …

[2548] 5/30/2012 email from FRBNY staff to OCC staff, "JPMC Physical Commodities," OCC-PSI-00000033 - 035, at 033.

[2549] See, e.g., 2/15/2012 internal OCC email, "JP Commodities," OCC-PSI-00000040 - 043.

[2550] It is possible that implementation of Section 716 of the Dodd-Frank Wall Street Reform and Consumer Protection Act would restrict the ability of a bank to take this course of action.

> In 2012 the SSO team [examination team for JPMorgan] identified a weakness in the FRS [Federal Reserve System] limit which caps commodity inventory and certain activities to 5% of the consolidated organization's Tier 1 capital. … [T]he FRS limit was only partially effective in constraining the firm's commercial commodities activities. JPM's expansion in physical commodities – both in the bank and nonbank – has brought the market value of its commercial commodity activity well above 5% of consolidated Tier 1 capital."[2551]

Despite this finding, the Federal Reserve appears to have taken no action to date to make its 5% limit more effective, such as by requiring the inclusion of bank assets, copper inventories, oil and gas leases, and assets acquired through acquisitions. The Federal Reserve's possible rulemaking offers an opportunity to address those issues and strengthen its size limits.

OCC examiners experienced a similar set of tactics used by JPMorgan to avoid safety and soundness limitations, and issued three supervisory letters in three years to eliminate impermissible physical commodity transactions at JPMorgan's federally-insured bank. Recently, JPMorgan has taken action to sell major components of its physical commodity activities, including much of the metals inventory held at its bank, which may reduce its overall physical commodity holdings and the risks those holdings represent.

(c) Operating Without Written Guidance or Standardized Periodic Reports

Although size limits are among their most powerful safety and soundness tools to reduce the risks associated with physical commodity activities, neither the Federal Reserve nor the OCC has issued formal written guidance on how their respective size limits are to be implemented. In the absence of written guidance, JPMorgan employed aggressive interpretations that attempted to maximize the amount of physical commodities it would be permitted to hold under both limits. While it has recently reduced its physical commodity holdings, the issues JPMorgan raised, including how to value certain assets, what assets can be excluded, and whether derivative holdings can be calculated on a notional rather than net basis, have not been publicly addressed or even disclosed. The lack of written guidance also invites financial institutions to develop their own implementation strategies that require time and resources from regulators to detect and analyze. Standardized rules in formal guidance would help clear up ambiguities in the regulatory limits and enable both financial institutions and regulators to implement the limits in a more efficient and effective manner.

A related problem has been the lack of standardized periodic reports tracking compliance with the regulatory size limits. For years, the Federal Reserve and OCC relied on information provided by JPMorgan on an ad hoc basis to enforce their respective regulatory limits. It was only after the 2011 aluminum trade raised questions about JPMorgan's actions that the Federal Reserve began receiving from JPMorgan periodic information in a standardized format regarding its compliance with the size limits.[2552] It was also at that point that the OCC learned JPMorgan

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[2551] Undated but likely in the second half of 2013 memorandum, "Commodities Focused Regulatory Work at JPM," prepared by Federal Reserve, FRB-PSI-300299 - 302, at 299, 301 [sealed exhibit].

[2552] See 10/21/2014 letter from JPMorgan legal counsel to Subcommittee, PSI-JPMorgan-15-000001 - 008, at 002.

Chase Bank had breached its 5% limit[2553] – and that bank personnel had inaccurately thought the limit was 20%, not 5%.[2554]

The documents produced to the Subcommittee indicate that it was not until early 2013, that the Federal Reserve and OCC began receiving, on at least a quarterly basis, information in a standardized format related to both the holding company and bank's compliance with the Federal Reserve and OCC size limits.[2555] That reporting aligns with a recommendation made by the FRBNY Commodities Team that the Federal Reserve should require "formal reporting of physical commodity exposures" including with respect to the "5% tier 1 capital limit."[2556] The Federal Reserve and OCC should take the next step and make those reports public so that policymakers, analysts, and market participants can develop a better understanding of the physical commodities held by large banks and their holding companies.

(d) Rationalizing Patchwork Limits

A final issue involves the failure of the Federal Reserve to rationalize the existing patchwork of limits that now apply to financial holding companies engaged in physical commodity activities. As explained earlier, a financial holding company's physical commodity activities are currently subject to a limit of 5% of Tier 1 capital when conducted under its complementary authority; and a limit of 5% of its consolidated assets when conducted as a grandfathered activity. Physical commodities held by a financial holding company's bank are subject to a separate OCC 5% limit on physical delivery of commodities in connection with derivative transactions. Physical commodities acquired under the merchant banking authority have no size limit at all. Neither do activities involving copper, platinum, or palladium. Collectively, these limits create a complex Venn diagram with spotty coverage and significant gaps. The complementary limit is also riddled with exclusions.

One Federal Reserve Bank of New York examiner took particular issue with the lack of coordination between the Federal Reserve and OCC 5% limits.

> "In part because the two regulatory limits reference separate metrics (Tier 1 capital and percentage of physical delivery) and legal entities (the Bank and BHC subsidiaries), the resultant dual-limit framework is less effective and vulnerable to regulatory arbitrage. The Firm may increase physical commodity holdings in the booking entity where it perceives the most regulatory leeway and both regulators may be challenged to limit overall physical holdings to intended levels."[2557]

[2553] See, e.g., 2/28/2013 email from Mark Lenczowski, JPMorgan, to Michael Kirk and others, OCC, "MRA Review," OCC-PSI-00000389 - 390; 1/20/2012 email from Blythe Masters, JPMorgan, to Michael Kirk, OCC, "Consolidated OCC Summary 19 Jan 2012," OCC-PSI-00000340 (apologizing for the OCC's learning about a limit breach "after the fact").

[2554] 1/25/2012 email from OCC staff to OCC staff, "Guidance on 5% rule," OCC-PSI-00000343 - 345, at 343 [sealed exhibit].

[2555] See, e.g., 2/12/2013 "Fed/OCC Quarterly Meeting," prepared by JPMorgan, FRB-PSI-301443 - 451, at 447.

[2556] 2012 Summary Report, at FRB-PSI-200477 - 510, at 484 [sealed exhibit].

[2557] 10/25/2012 email from FRBNY staff to OCC staff and FRBNY staff, "Re: Regulatory limit framework around physical commodities," FRB-PSI-400179 - 181, at 181 [sealed exhibit].

The examiner further noted: "The current regulatory limit framework is thus siloed to some extent without an overall limit."[2558]

Nothing in the law necessitates this lack of coordination and consistency across regulatory authorities. Nothing in the statutory text or legislative history of the Gramm-Leach-Bliley Act suggests that the Federal Reserve's broad authority to protect the safety and soundness of financial institutions and the U.S. financial system was intended to be limited in any way, such as by precluding the establishment of an integrated, comprehensive, coherent limit on physical commodity activities.

To the contrary, Section 5(b) of the Bank Holding Company Act gives the Federal Reserve broad authority "to issue such regulations and orders ... as may be necessary to enable it to administer and carry out the purposes of this chapter and prevent evasions thereof."[2559] That broad grant of authority provides the legal foundation for the Federal Reserve to issue regulations or orders establishing limits on physical commodity activities authorized under the Bank Holding Company Act.[2560]

In fact, pursuant to its broad authority under the Bank Holding Company Act and its responsibility to ensure the safety and soundness of the U.S. banking system, the Federal Reserve has already imposed size limits on physical commodity activities undertaken with respect to both the merchant banking and complementary authorities. With respect to merchant banking, the Federal Reserve initially limited the size of those activities to no more than 30% of a financial holding company's consolidated Tier 1 capital.[2561] Later, the Federal Reserve repealed that limit after adopting rules imposing additional capital charges on those activities.[2562] The imposition and subsequent removal of the merchant banking limit was not provided for in the statute, but was instead grounded on the Federal Reserve's authority to administer the Bank Holding Company Act and safeguard the U.S. banking system. Similarly, the existing 5% limit imposed by the Federal Reserve on complementary physical commodity activities is not expressly required or authorized by the statute authorizing complementary activities. Rather, the statute is silent on the amount of activity allowable under the complementary authority,[2563] and yet the Federal Reserve has imposed, not only a size limit, but also other conditions on each financial holding company given that authority to ensure complementary activities are carried out in a safe and sound manner.[2564]

[2558] Id.

[2559] 12 U.S.C. §1844.

[2560] As discussed in Chapter 3, above, it is the Bank Holding Company Act that authorizes financial holding companies to engage in physical commodity activities that are financial in nature or incidental thereto under Section 4(k)(1)(B); complementary to financial activities under Section 4(k)(1)(B); merchant banking investments under Section 4(k)(4)(H); or grandfathered under Section 4(o).

[2561] See 12 C.F.R. §225.174 (restricting merchant banking investments to no more than 30% of the financial holding company's Tier 1 capital, or 20% of its Tier 1 capital after excluding private equity funds).

[2562] "Capital; Leverage and Risk-Based Capital Guidelines; Capital Adequacy, Guidelines; Capital Maintenance: Nonfinancial Equity Investments," 67 Fed. Reg. 3784 (1/25/2002) (adopting a final rule that ended the size limit while imposing specific capital requirements for merchant banking investments).

[2563] See 12 U.S.C. §1843(j).

[2564] See e.g., 2005 JPMorgan Complementary Order, 92 Fed. Res. Bull. C57 - C59 (imposing numerous restrictions on the complementary powers authorized).

Using its broad authority to administer the Bank Holding Company Act and ensure the safe and sound operation of financial holding companies, the Federal Reserve can remedy the current ineffective and incoherent set of size limits on physical commodity activities. One solution would be for the Federal Reserve to impose a single limit on all of the physical commodity activities conducted by a financial holding company and its affiliates – no matter how authorized – to no more than 5% of the financial holding company's consolidated Tier 1 capital. That approach would simplify, rationalize, and strengthen the most important safeguard ensuring that financial holding companies conduct physical commodity activities on a limited basis, in a safe and sound manner, with minimal risk that U.S. taxpayers would one day be called upon for another multi-billion-dollar bailout.

In addition, the Federal Reserve could provide better guidance on how to calculate the market value of physical commodities for purposes of complying with the size limit. In its 2012 Summary Report, the FRBNY Commodities Team stated that it was already "formulating specific guidance on the appropriate calculation methodology to be used by JPMC [JPMorgan] as well as peer firms." Two years later, however, that guidance has yet to be circulated or made public. In addition, the various limits remain compartmentalized. The Federal Reserve's current rulemaking offers an opportunity to correct the many problems with the size limits on physical commodity activities.

(4) Analysis

The Federal Reserve and OCC have each imposed limits on the physical commodity activities that may be undertaken by a bank or financial holding company. Those size limits are intended to reduce risks that, in a worst case scenario, could lead to taxpayer bailouts. As currently configured and implemented, however, the limits do not impose a meaningful overall cap on the amount of physical commodity activities that may be conducted by a financial holding company and its federally insured bank. They are riddled with multi-billion-dollar exclusions and are compartmentalized in ways that reduce their effectiveness. The current problems are brought home by JPMorgan's ability to amass physical commodities valued at $17.4 billion, representing nearly 12% of its Tier 1 capital, at the same time it was allowed by regulators to calculate that its holdings totaled just $6.6 billion, representing 4.5% of its Tier 1 capital. The differences between those two sets of figures are startling, troubling, and need to be resolved.

On January 21, 2014, the Federal Reserve issued an Advance Notice of Proposed Rulemaking on financial holding company involvement with physical commodities.[2565] That rulemaking effort addresses, in part, the question of differing authorities and limits, and offers a way to remedy the faults of the current system. The OCC should also revise its physical commodities limit to prevent it from being undermined or gamed. To promote the safety and soundness of the banks and their holding companies, and to prevent potential abuses, the current patchwork of limits on physical commodities activities using different measures should be reconciled across authorities and regulators.

[2565] See Federal Reserve advance notice of proposed rulemaking, "Complementary Activities, Merchant Banking Activities, and Other Activities of Financial Holding Companies related to Physical Commodities," 79 Fed. Reg. 3329 (Jan. 21, 2014), http://www.gpo.gov/fdsys/pkg/FR-2014-01-21/pdf/FR-2014-01-21.pdf.